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# Gleanings in Bee Culture



A Modern Apiary of Jumbo Hives under the Shadow of Mt. Hymettus (Greece).

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

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Vol. XXXVI



No. 5

# DEEN LOOM

QUICK PROFITS

## Flying Shuttle

**W**HY not put your spare moments to work bringing in extra cash? Some people in your town are waiting for some one to make up their rags into carpets, rugs and portieres.

It's gentle, honest work that any man or woman can do and make good profit at it. Just to prove it, here are the names and addresses of fifteen out of hundreds of people who have woven carpets and rugs at a good profit. They use a Deen Loom.

### Good Profits Made At Home

Mrs. C. R. Stover, Bradford, Ohio  
 Oma Cooper, Dale, Indiana  
 R. P. McGowan, Piedmont, W. Va.  
 Mrs. Rob. Record, Seymour, Illinois  
 Mrs. Henry Clark, St. Anthony, Iowa  
 Mrs. A. L. Clark, Central Square, N. Y.  
 Mrs. H. C. Blanahet, New Lathrop, Mich.  
 Mrs. J. E. Wiley, Sylvan Grove, Kansas  
 Mrs. A. A. Albrecht, Sioux City, Iowa  
 Mrs. H. Goebel, West Point, Iowa  
 Mrs. J. S. Gilbert, Milton Junction, Wis.  
 Mrs. L. E. Foster, Bedford, Indiana  
 Mrs. Salanda Gunckel, Osgood, Ohio  
 Mrs. D. E. Williams, Pickering, Missouri  
 M. H. Vining, Waterloo, Iowa

Remember these are only fifteen of scores and hundreds who at this moment are hustling out work and getting good money for it.

### You Who Read This

Haven't you often wished for a useful employment by which to make money in your spare hours? No doubt you know of people who would gladly pay you for weaving their rags into carpets and portieres.

It's not only the poorer people that have hand-woven carpets and rugs on their floors, but well-to-do people of city, village and country-side appreciate the handsome and useful products of home-weavers.

By canvassing among your friends you can work up a good business. Profitable, too. Besides, it's done at home with the children, where you can have an eye on everything in house and yard.

### It's Not Hard Work

Weaving with a Deen Loom is soon learned. The Loom itself is a simple affair, easily handled, and soon understood. May Vittum, Barclay, Kansas, says:

"I can weave almost twice as much as I could with the old loom. I would not go back to the old one for anything. The new one is faster, easier, and does the best work."

Having a steel frame well-braced, and rigid, it resists the shock and stroke of the shuttle mechanism, remaining solid for years without repairs.

It will accommodate any size rug or carpet demanded.

### CCUPON

Deen Loom Co. — Date ..... 19....  
 Please send me your free catalog and detailed explanation of your "Easy Pay Plan" of selling your Deen Loom.

Name.....

Address.....

Town..... State.....

### What May Be Woven

Any design can be made in any number of colors that taste and fancy may dictate. You can weave rugs, hammocks, all kinds of hand-weaves, carpets, portieres, etc. The materials to use are common carpet warp, which can be bought at any dry goods store; carpet rags, old clothes of any kind, old ingrain and Brussels carpets, blankets, or nearly any kind of fabric. Your customers furnish you all material; you do the weaving and get good pay for it.

### A Few Prominent Reasons for Buying

- 1.—You can make from \$2 to \$3 a day if you weave 8 hours daily.
- 2.—You can make from \$4 to \$10 a week using only part of your time—say evenings after work and an hour in the morning.
- 3.—We help you personally by letter if you wish. But this is seldom necessary, because we add to our simple detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
- 4.—The Fly-Shuttle is easily filled, quick to handle, doesn't bother.
- 5.—The Winding Mechanism and Feed-Governor are new improvements. The latter keeps the warp and weft mechanism within control. It saves much material and prevents hours of the down-away time used by old-style looms.
- 6.—It takes up much less room than many other styles. It requires a room but 10 feet square for a complete weaving shop.
- 7.—We send you everything with the Loom. You can go right to weaving as soon as you get warp and rags.

### You Needn't Pay All At Once

Pay something down. As Loom brings in profits send balance by easy installments. Fill in the coupon and mail. We'll send our free catalog and a letter about our easy-pay plan.

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LOOM CO.  
Harlan,  
Iowa**

Drawer  
100,



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**G**IVE ME YOUR ORDERS for the **Best Goods Made**. You will be pleased on receipt of them. You will **save money** by ordering from me. My stock is complete; in fact, I keep **every thing** the bee-keeper needs. Cincinnati is one of the best **shipping-points** in the Union, particularly in the South, as all freight now **goes through Cincinnati**. Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly free of charge.

### **Special Discount on Early Orders**

I will buy your **HONEY AND BEESWAX**. I pay **Cash on Delivery**; or if you are in **need of honey**, write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted—in cans, barrel-lots, or car-lots—of **extracted or comb honey**. I guarantee its purity.

### **WANTED=Sweet Clover.**

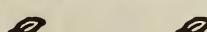
If you have **Sweet Clover**, state if yellow or white, hulled or unhulled, also quantity and lowest price.

---

# C. H. W. WEBER

Office and Salesroom, 2146-2148 Central Ave.  
Warehouse, Freeman and Central Avenue.

CINCINNATI,



OHIO

## Honey Markets.

### GRADING RULES FOR COMB HONEY.

**FANCY.**—All sections well filled, combs straight, firmly attached to all four sides, the comb unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

**A NO. 1.**—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

**NO. 2.**—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

**NO. 3.**—Three-fourths of the total surface must be filled and sealed.

**NO. 4.**—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. It is also to be understood that this is the price at which sales are being made by commission merchants, by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

**ST. LOUIS.**—Since ours of Jan. 20 a light demand for extracted honey has been noticeable. Comb honey is, however, as dull as reported formerly. We quote: Fancy white comb honey, 15 to 16; No. 1, 14 to 15; amber, 13 to 14; broken and defective honey sells at considerably less. Extracted white, in cans, of which this market is bare, nominal at 8½ to 9; amber, in cans, 8 to 8½; in barrels and half-barrels, ¾ to 1 cent less if liquid. Granulated in cans and barrels is selling at ¾ ct. below above quotation. Beeswax, 27 for prime; all impure and inferior, less.

R. HARTMAN PRODUCE CO.,  
Feb. 10. St. Louis, Mo.

**KANSAS CITY.**—There is some improvement in the demand for both comb and extracted; no change in price. We quote: Fancy white comb, 24 section, \$3.25 per case; No. 1 white comb, 24 section, \$3.10 per case; No. 2 white and amber, 24 section, \$2.75 per case. Extracted, white, 8 to 8½; dark, 6. Beeswax, 25.

C. C. CLEMONS & CO.,  
Feb. 10. Kansas City, Mo.

**CINCINNATI.**—There is nothing particularly new in the honey market at this writing, for business in general is quiet. We are selling the very fanciest comb honey at 16 to 17½; fancy table honey, in crates of two 60-lb. cans each, at 9 to 10; amber honey, in barrels at 5½ to 7, according to the quality. For good beeswax, free from dirt, we are paying 28 cents cash and 30 in trade, delivered here. THE FRED W. MUTH CO.,  
Feb. 14. Cincinnati, O.

**INDIANAPOLIS.**—Demand for best grade of extracted honey is good, while comb honey is meeting with slow sales. Very little honey is being offered by producers, and jobbers are carrying a very limited stock. Bottled goods in groceries find slow sales, which can be attributed to dull times; but there is another reason—many bottlers are making the mistake of putting out inferior goods. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 16 to 17; extracted white clover, 9 to 10; amber in barrels, slow at 6 to 6½. Beeswax, 28 cents cash or 30 cents in exchange for merchandise. WALTER S. PODER,  
Feb. 20. Indianapolis, Ind.

**ZANESVILLE.**—The demand for honey is still rather slack—very little change since the last report. Prices show a little weakening, evidently indicating that commission men are anxious to realize on their stocks, even at a sacrifice. No. 1 to fancy white comb brings at wholesale 17 to 18; very little demand for extracted except in small retail packages. Beeswax is very quiet; would accept small lots at 30 cents. In exchange for bee-supplies. EDMUND W. PERICE,  
Feb. 20. 136 W. Main St., Zanesville, O.

**CHICAGO.**—There has been a better demand for comb honey this month; and while the prices are not over 16 to 17 for best grades of white it may clean up well at this range. Extracted in slow of sale at 8 to 9 for white grades; ambers, 6 to 7. Beeswax, 28.

R. A. BURNETT & CO.,  
Feb. 10. Chicago, Ill.

*Later, Feb. 20.*—The market is a dragging one; very few sales are being made, and those of small volume. There is really not as much demand as in previous seasons at this time, with a large supply in sight.

**DENVER.**—The demand for both comb and extracted honey has been rather light of late, but we expect it to improve soon. We quote: No. 1 white, per case of 24 sections, \$3.25; No. 1 light amber, \$3.00 to \$3.10; No. 2, \$2.75 to \$2.90; extracted, white, 9 to 10; light amber, 8 to 9; strained, 6½ to 7½. We pay 24 cents for clean yellow wax delivered here.

THE COLORADO HONEY-PRODUCERS' ASS'N,  
Feb. 14. F. Rauchfuss, Mgr., Denver.

**SCHENECTADY.**—Our market is very quiet, with a limited demand for all grades. We expect some movement in buckwheat extracted for Jewish holiday later on. We quote: Fancy white clover, 15 to 16; No. 1, 14; mixed and buckwheat, 12 to 13; light extracted, 8½ to 9; dark, 7½ to 8. CHAS. MACCULLOCH,  
Feb. 19. Schenectady, N. Y.

**SAN FRANCISCO.**—Prices are well sustained on all grades of honey, though there is no great amount of inquiry. Stocks are sufficient for all present demand, but are expected to be well cleaned up before the new crop comes in. Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 6½ to 6¾.—*Pacific Rural Press*, Feb. 15.

THERE IS A SATISFACTION TO THE PRACTICAL BEE-KEEPER IN KNOWING THAT THE

## MUTH SPECIAL DOVETAILED HIVES, AND OUR OTHER SUPPLIES, ARE THE BEST MADE.

Sold at manufacturer's prices here in Cincinnati.  
Have been at it all our lives. Send for our free catalog.  
28 cts. cash, 31 cts. in trade for good beeswax.

**THE FRED W. MUTH COMPANY**  
51 WALNUT STREET

THE BUSY BEE MEN

CINCINNATI, OHIO

ST. PAUL.—Fancy white clover, new, per lb., 18; extracted, in 60-lb. cans, per lb., 10.

W. H. PATTON, Sec. Board of Trade,  
St. Paul, Minn.

LIVERPOOL.—Honey market for Chilian, 4 to 8½; Peruvian, 4 to 6½; Jamaican, 4½ to 6; California, 6½ to 11. Beeswax, African, 26 to 27; Jamaican, 34 to 35; American, 30 to 33; West Indian, 27 to 32; Chilian, 30 to 35. TAYLOR & CO.,  
Jan. 29. 7 Tithebarn St., Liverpool.

MARSEILLES.—Beeswax of Madagascar, 30; Morocco, 30; Algeria, 30½; Aden or Abyssinia, 31 to 31½. French honey, 10; beeswax, 30 to 32.—*L'Apiculteur*.

HAVRE.—Chilian honey is selling at about 5 cts. per lb. Beeswax is calm at 33.

# Extracted Honey Wanted

We are always in the  
market.

If you have any to sell, mail  
small average sample to

NATIONAL  
BISCUIT COMPANY

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WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you  
intend to buy, correspond with us.

We are always in the market for WAX  
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We have large apiaries of fine stock.  
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Circulation  
32,000.  
72 pages.  
Semi-  
monthly.

# Gleanings in Bee Culture

*Devoted to Bees, Honey, and Home Interests.*

Published by  
THE A. I. ROOT CO., Medina, Ohio

J. T. CALVERT, Business Manager

**POSTAGE IS PREPAID** by the publisher for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, and Mexico. Canadian postage is 30c per year. For all other countries in the Postal Union add 60 cents per year postage.

**CHANGE OF ADDRESS.** When a change of address is ordered, both the new and the old address must be given. The notice should be sent two weeks before the change is to take effect.

**DISCONTINUANCES.**—The journal is sent until orders are received for its discontinuance. We give notice just before the subscription expires, and further notice if the first is not heeded. Any subscriber whose subscription has expired, wishing his journal discontinued, will please drop us a card at once; otherwise we shall assume that he wishes his journal continued, and will pay for it soon. Any one who does not like this plan may have it stopped after the time paid for it by making his request when ordering.

**HOW TO REMIT.** Remittances should be sent by Draft on New York, Express-order or

Money-order, payable to order of The A. I. Root Company, Medina, Ohio. Currency should be sent by Registered Letter.

**AGENTS.** Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

## Foreign Subscription Agents.

Foreign subscribers can save time and annoyance by placing their orders for **GLEANINGS** with any of the following authorized agents. at the prices shown:

**PARIS, FRANCE.** E. BONDONNEAU, 142 Faubourg St. Denis. *Per year, postpaid, 7½ fr.*

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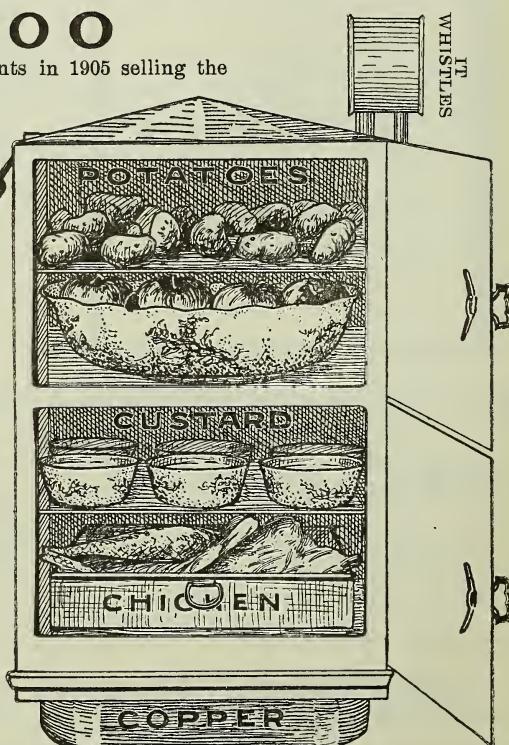
## Steam Cooker- Baker.

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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z HUTCHINSON, editor and proprietor of the *Bee-keepers' Review*, and author of *Advanced Bee Culture*.

No bee-keeper's library can be at all complete without a copy of this magnificent aparian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal*.

This work of 536 pages is, as its name implies, a complete cyclopaedia of every thing pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that, "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of *GLEANINGS*, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and cut-apiaries; Dr. E. F. Phillips on the eye, parthenogenesis, and ascent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say anything about a book of which already 100,000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee-keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner, and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal*. Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide," and "The Honey-bee."

THE A. I. ROOT CO.  
MEDINA, OHIO

# Gleanings in Bee Culture

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This firm is the result of a combination between eleven different factories, all located in the city of Cleveland, Ohio. The following have combined for mutual selling advantages: A buggy-top factory; a vehicle and harness factory; a handy wagon and steel-wheel factory; a paint and varnish factory; an incubator and brooder factory; an agricultural-implement factory; a metal roofing and siding factory; a sewing-machine factory; a fence factory; a stove and range factory, and a roofing factory. This combination proposes to sell its goods at factory prices direct to the consumer; and to reduce further the cost of selling they have combined to advertise as one concern. The offices are situated in the Whitney Building, Cleveland, from which a campaign of education in the line of direct purchase from the makers is being conducted. It has long been the desire of political economists to eliminate the middle-man; and the plan devised by The United Factories Co. seems the most reasonable and feasible of any that has been proposed. The readers of this journal have been favored with their advertisement of incubators and brooders, and from time to time we will publish small notices relating to other phases of their work. Write to them, mentioning this journal.

SHUMWAY'S RELIABLE SEEDS.

It is our privilege to call attention to the annual spring catalog of seeds and flowers issued by R. H. Shumway, the great seedsman of Rockford, Ill. He started with seeds about the same time A. I. Root commenced to keep bees. By honesty and fair dealing he has succeeded in establishing a large trade in seeds throughout the middle.

EGGS FOR SALE

EGGS FOR SALE.

Through some oversight on our part, the advertisement of Frank C. Pellett, of Atlantic, Iowa, offering White Wyandotte eggs, was omitted from our Feb. 15th number. Please note his advertisement in this and succeeding issues.

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## Catalogs Received.

Queen Land, a catalog of Italian bees and queens issued by S. Simmins, Heathfield, Sussex, England.

John Lewis Childs, Floral Park, N. Y.; general catalog of farm and garden seeds, more especially the former.

Seed Annual for 1908; catalog of D. M. Ferry & Co., Detroit, Mich. The annual announcement of an old reliable firm.

T. W. Woods & Sons, Richmond, Va.; catalog of farm and garden seeds; annual announcement of a celebrated seed-house.

O. A. D. Baldwin, Bridgeman, Mich.; catalog of strawberry-plants and small fruits. Important to the strawberry-grower.

W. N. Scarff's catalog of profit-getting fruits, New Carlisle, Ohio. Mr. Scarff's catalog is always interesting. Send for a copy.

Seed-book of Fairview Seed Farms, Syracuse, N. Y. This is largely a vegetable-catalog, suited to market-gardeners and others.

Mary E. Martin, Floral Park, N. Y.; flowers for springtime. General list of flower-seeds. Don't pass this catalog by when ordering.

R. M. Kellogg Co., Three Rivers, Mich.; full catalog of strawberry-plants. Every berry-grower should send for this catalog at once.

Catalog of L. J. Farmer, Pulaski, Oswego Co., N. Y., for 1908. A list of berry and small-fruit plants; also farm fowls of pure breeds.

Portland Seed Co., Portland, Oregon; a general list of seeds, bee-supplies, and poultry requisites, sold by a thoroughly reliable concern.

J. C. Harrison & Sons, Berlin, Md.; catalog of fruit-trees. This is the catalog and price list of a firm famous for its nursery fruit-trees.

W. F. Allen, Salisbury, Md.; catalog of strawberry-plants and other small fruits. No berry-grower should forget to send for Mr. Allen's catalog.

Bateman Mfg. Co., Greenloch, N. J.; catalog of "Iron Age" farm and garden implements. Ought to be in the hands of all farmers and gardeners.

Hatching Facts, from Belle City Incubator Co., Racine, Wis. Catalog of 18 pages, describing the Belle City Incubators and Brooders; also sprayers.

Green's seeds for 1908—catalog issued by E. C. Green & Son, Medina, Ohio (formerly The A. I. Root Co.). Our readers are all familiar with this catalog.

Johnson's Garden and Farm Manual for 1908. Full catalog, 219 Market St., Philadelphia, Pa. Of great importance to truck and market gardeners everywhere.

Continental Plant Co., Kittrell, N. C.; strawberry-plants, fruit-trees, grapevines, etc. This is from one of the leading berry-plant growers of worldwide repute.

The Good & Reese Co., Springfield, Ohio; trade-list for January to March 1. Roses, etc. Said to be the most extensive growers of rose-bushes in the world.

Spring catalog of H. H. Berger & Co., 70 Warren St., New York—a handsome catalog containing many novelties of a superior character; worth sending for.

The Barteldes Seed Company, Denver, Col.; every thing for farm and garden; bee-supplies; very interesting to all growers in the Rocky Mountain region.

Catalog of the Texas Seed House, Messrs. Reichardt & Schulte, Houston, Texas. Enumerates seeds adapted to Texas, New Mexico, Oklahoma, and Louisiana.

Mills' Seed Catalog for 1908; a full general list of farm and garden seeds by F. B. Mills, Rose Hill, N. Y. Pennsylvania, New England, and New York readers, please note.

Thorburn's Seeds; a beautiful catalog issued by J. M. Thorburn & Co., 33 Barclay St., New York. One of the handsomest catalogs we ever saw. The covers are a work of art.

Currie Bros. Co., Milwaukee, Wis. Farm and Garden Annual, or general catalog of seeds. Our Northwestern readers can not very well overlook this list of every thing for the garden.

Seeding machines, from The Wayne Works, Richmond, Ind. No farmer should fail to send for a copy of this beautiful catalog.

Seeds and Bulbs for 1908, issued by A. C. Kendal, 2010 Ontario St., Cleveland, Ohio. Very suitable for farmers and others in Northern Ohio.

Catalog of The Gem Incubator Company, Trotwood, O. U. S. A. A first-rate catalog of incubators and other poultry culture tools.

The Iron Age Farm and Garden Implements, from the celebrated Bateman Mfg. Co., Greenloch, N. J. Too well known to require any praise.

Henderson's Farmer's Manual for 1908. This, as its name implies, is a catalog of seeds for the farm—not for the garden. Worth sending for by farmers.

Catalog of the Model Incubator Co., Chas. A. Cyphers, President, Buffalo, N. Y.—two catalogs gotten up in handsome style, and well worth sending for.

Price list of L. J. Farmer, Pulaski, Oswego Co., N. Y. This is not a catalog, but a price list of raspberry, strawberry, blackberry, and other small-fruit plants.

Poultry for Profit, by J. W. Miller & Co., Freeport, Illinois. This is a very handsome catalog of 130 pages devoted to the sale of incubators and fancy fowls.

Charles A. Green, Nursery Company, fruit-book and catalog, Rochester, N. Y. An excellent but pretentious catalog of fruit-trees, etc., for the temperate zone.

Illustrated catalog of the Jackson County Nurseries, Bosky Dell, Ill.—devoted to strawberry, apple, peach, pear, plum, grape, cherry, raspberry, and other fruit-plants.

Hardy fruit and ornamental trees, shrubs, vines, and roses, by T. J. Dwyer & Co., Cornwall, N. Y. This is the general catalog of the famous Orange County Nurseries.

The Improved Raney Canner catalog sent by The Raney Canner Company, of Chapel Hill, North Carolina. Valuable to those who want to can fruits on a small scale.

Farm and Garden Implements, Planet Jr., issued by S. Allen & Co., Philadelphia, Pa. Annual catalog of the famous Planet Jr. tools for farmers and gardeners.

Fourteenth Annual Poultry-Book and catalog of Successful and Eclipse Incubators and Brooders. (English Edition.) Des Moines Incubator Co., Des Moines, Iowa.

Johnson's Wholesale Trade Price List for 1908—intended for circulation among truck-growers and florists who require considerable quantities of seeds. Address, 217 Market St., Philadelphia, Pa.

Annual catalog of The Famous Old Trusty Incubator and Brooder, manufactured by the M. M. Johnson Co., Clay Center, Neb. Special catalog of nearly 200 pages with much information of value.

Sure-Hatch Incubator Co., Fremont, Nebraska—a large annual catalog of incubators and poultry-supplies. This is a large catalog of nearly 100 pages about the same size as those of this journal.

Trade Price List for 1908 of Livingston's True Blue Seeds. This is from the great tomato specialists, The Livingston Seed Co., Columbus, O. If you are in any way interested in tomatoes, send for it.

Elwanger & Barry, Mount Hope Nurseries, Rochester, N. Y. General catalog. The usual spring catalog of this famous firm. Also "How to Have Roses," by the same firm. Well worth sending for.

Henderson's Implement Catalog for 1908. As its name implies, it is a complete catalog of agricultural and horticultural tools; also books on rural life and welfare. Henderson & Co., 35 Cortlandt Street, New York.

How to Save One-half the Time, the Labor, the Cost of Hatching and Rearing Chicks by Artificial Incubation. This is the annual catalog of the H. M. Sheer Company, Quincy, Ill. Ships incubators knocked down.

Excelsior Incubators, Brooders, and the Wooden Hen, by Geo. H. Stahl, Quincy, Ill. This catalog extends to 208 pages. The name of Stahl is well known to American poultrymen, in connection with poultry supplies.

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## A HOME INDUSTRY.

Many men and women are looking and longing for some profitable industry which they can pursue without leaving home or separating themselves from their families. In this connection there are very few industries which will in the long run surpass poultry culture, and by that we mean turkey and duck raising as well as chickens.

This industry has two great advantages over most pursuits of the kind. First, but little capital is required to start with; and, second, there is a market for the products almost everywhere. One may start with an incubator such as is made by the George Ertel Co., Quincy, Ill., for \$7.85, delivered at any railroad station east of the Rockies. This holds 100 eggs which is ample for a beginner.

The catalog issued by the same concern is really a treatise on poultry, and ought to stimulate farmers very greatly to make far greater efforts than they have hitherto done to make the chicken business not only profitable but a pleasure besides. Write to the Ertel Co., mentioning us.

## EVERGREEN WINDBREAKS FOR THE BLIZZARD BELT.

Nothing is doing more to improve farm life in the "blizzard belt" than the planting of hardy trees. This is particularly true of trees suitable for windbreaks to shelter man and beast from trying prairie winds. Crops, too, are sheltered, and in time the

whole aspect of the country will be changed by tree-planting, giving not only a pleasing and attractive appearance to the landscape, but also doing much to make life more agreeable to all the inhabitants thereof. The treeless prairie is being rapidly changed into a beautifully clothed landscape at comparatively small expense. In the matter of fruit-trees, equally good results are being accomplished, and all parts of the earth have been ransacked to find fruits suited to the extremely trying conditions of our Northwest. One of the foremost workers in this line of human endeavor has been The Gardner Nursery Co., of Osage, Ia., who started at the problem 38 years ago, and who may be said, without prejudice, to have mastered that problem very satisfactorily. It is worth while encouraging such a firm with an order—the more so when you help yourself by doing it. It will pay *you* to write this firm for information concerning trees.

## TO THE LADIES.

We desire to call special attention to the advertisement of the American College of Dressmaking, Kansas City, Mo. It appears on page 301 of this issue. We have carefully examined their literature, and we see no reason why any person with a natural aptitude for dressmaking may not learn this trade by this system of instruction by mail. There are many who will be glad to avail themselves of the offer now being made by this college of dressmaking.

# NOT A PARROT.

A parrot simply repeats. The *Bee-keepers' Review* does repeat some of the good things to be found in the other journals, but it does more—it comments upon them. Each article is appropriately introduced; the reason given why it is considered worthy of production; and, at its close, the salient points are enlarged upon, praised or condemned, as the occasion demands, and additional thoughts, views, and experiences given at length. Sometimes a short extract does little more than

## FURNISH A TEXT

for a long editorial. In this way the extracted department is raised from a mere parrot-like repetition of what appears in other journals to one that has life, personality, and vim.

All of the journals are carefully read, and every thing of any importance is noticed in some way. Often the

## KERNEL OF A LONG ARTICLE

can be given in a short editorial. Sometimes an article can be condensed, or a few paragraphs given, accompanied by editorial comment, and all be made clear. Occasionally an article must be given entire in order to do the subject justice, but some comment or criticism may add greatly to its value.

Years ago Mr. Heddon used to say that, if some one in whom he had confidence could read all of the bee-

journals, select the articles that were of real value, and gather them together into one journal, he would gladly

## PAY TEN DOLLARS

for such a journal. This is exactly what the *Review* does, at least it gives, in some form, all that is most valuable in all of the journals—hence its name.

A man who is making a business of bee-keeping ought to read all of the bee-journals; but if only one journal is to be taken, then the *Review* fills the bill most completely.

If you wish to see how completely the *Review* covers the whole apicultural field, yet how far it is removed from a mere parrot-like repetition, just try it for one year. It will cost only \$1.00, and all of the back numbers for 1907 will be sent *free*, in the bargain. In other words for \$1.00 you can get the *Review* for 1907 and 1908; and when you have sent your dollar, and received the back numbers, look them over carefully; and if you would then rather have

## YOUR DOLLAR BACK

than to have the *Review* keep on coming for the rest of the year, just drop me a postal and I'll return the money, and you may keep the back numbers, and welcome.

**W. Z. HUTCHINSON,**

..

**FLINT, MICH.**



## QUEENS FOR 1908



J. E. HAND, the veteran bee-keeper and EXPERT QUEEN-BREEDER, will devote a part of his time the coming season to the rearing of CHOICE QUEENS from a superior strain of LONG-TONGUE RED-CLOVER ITALIANS that have gained a world-wide reputation for HARDINESS, GENTLENESS, AND SUPERIOR HONEY-GATHERING QUALITIES. Watch for his ad. It will open your eyes to a few points in queen-rearing that will save you dollars.

**HIGHLAND BEE AND POULTRY FARM, J. E. HAND, PROPRIETOR, BIRMINGHAM, ERIE CO., O.**

## Lewis Bee-supplies at Factory Prices

BEST GOODS.

PROMPT SHIPMENTS.

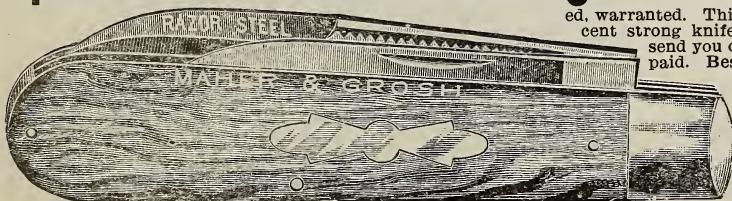
Send for 1908 catalog on new supplies and fire-sale list.

MARCH DISCOUNT 2%.

ARND HONEY & BEE SUPPLY CO., H. M. Arnd, Prop.  
191-193 E. Superior St., Chicago, Ill.

*Successors to*  
York Honey & Bee Supply Company.

## Special Cut Price to Gleanings' Folks.



Every M. & G. blade is hand-forged from razor steel, file-tested, warranted. This cut is exact size of 75-cent strong knife. To start you we will send you one for 48c; 5 for \$2, postpaid. Best 7 inch shears, 60c. This

Knife and Shears, \$1.00.  
Pruning, 75c; budding, 35c; grafting, 25c. Send for 80-page free list and "How to Use a Razor."

Maher & Grosh Co.,  
617 A St. Toledo, Ohio.

# OUR 1908 CATALOG

is ready for mailing. We should like to send YOU a copy. It gives prices and description of "ROOT-QUALITY" bee-supplies. These are the goods that thousands of SUCCESSFUL bee-keepers are using. We are the "ROOT-QUALITY" HEADQUARTERS in MICHIGAN. We save you time and freight expense.

On the back outside cover page of our new catalog we make a special offer on GLEANINGS to both new and old subscribers. If you renew soon or wish to subscribe, let us know.

By the way, did you notice the list of goods that we are offering at a SPECIAL rate in Jan. 15 Gleanings? Look it up.

**M. H. HUNT & SON, Redford, Mich.**

TO THE  
**BEE-KEEPERS**  
 OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, "The best is cheapest."

**E. GRAINGER & COMPANY,**  
 Deer Park,  
**Toronto, Ontario, Canada.**

CANADIAN AGENTS FOR  
 THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

European Bee-keepers!

**Save Time  
 and Expense**

by sending direct all your orders  
 and correspondence to our exclu-  
 sive agent for the European  
 continent and its colonies. . .

**EMILE BONDONNEAU**  
 142 FAUBOURG - ST. DENIS, PARIS

**Prompt Service  
 and Satisfaction  
 Guaranteed. . .**

**The A. I. Root Company**

# \$UCCE\$\$ IN BEE-KEEPING

The man who makes a \$ucce\$\$ in bee-keeping is the one who does things when they should be done.

The time to buy goods is before they are needed; not when the rush comes.

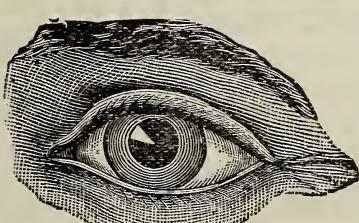
Let us send you our catalog for 1908, so you can make out an order now.

**THE A. I. ROOT COMPANY**  
SYRACUSE, :: :: :: NEW YORK

## WE DO NOT SELL ROOT'S SUPPLIES

So many advertisers in GLEANINGS IN BEE CULTURE sell supplies bought from the Root Co. that to explain away a false impression we are compelled to state that we are not jobbers, but *manufacturers*. We make all the Bee-supplies we sell. Minneapolis is the largest lumber-distributing point in America. We buy lumber to advantage; we manufacture by water-power; we have lowest freight rates, and we sell on manufacturer's profit basis. Let us quote you prices.

**MINNESOTA BEE SUPPLY COMPANY**  
NO. 22 NICOLLET ISLAND, .. .. MINNEAPOLIS, MINN.

Keep your  on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once.

For prompt shipments and good service, we are at your command

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO., MISSOURI.**

# What's the Matter With Hilton?

WHY, HE HAS A LOT OF SUPPLIES HE WANTS TO LET YOU HAVE WITHIN THE NEXT SIXTY DAYS AT A DISCOUNT, TO MAKE ROOM FOR THE NEXT SEASON'S GOODS. JUST SEND A LIST OF WHAT YOU WANT AND GET ESTIMATE. IF YOU HAVEN'T HIS FORTY-PAGE ILLUSTRATED CATALOG, SEND FOR IT AT ONCE

CASH OR SUPPLIES FOR BEESWAX AT ALL TIMES

**GEORGE E. HILTON**  
FREMONT, :: :: MICHIGAN

## OUR SUPPLY BUSINESS HAS BEEN IN New York City

for 15 years. It has increased each year. We want YOUR order this year, and will quote you attractive prices. Our prices are f. o. b. cars here. We furnish bees in any quantities. Have seven hundred colonies in our own yards. Catalog free.

**I. J. STRINGHAM,**  
Apriaries, Glen Cove, L. I. 105 Park Pl., N. Y. City.

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At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. **W. D. SOPER, Jackson, Mich.**

## ROOT'S BEE-SUPPLIES AT SPRINGFIELD, MASS.

New Goods. Free Catalog. 'Phone.  
**F. R. DANIELS, 117 FLORENCE ST.**



FOR SALE. - It will pay to get our special proposition.  
**A. G. WOODMAN & CO., Grand Rapids, Mich.**

## THE DANZENBAKER SMOKER

PAT. OCT. 3, '05, JUNE 4, '07

**GOLD MEDALS**  
St. Louis Exposition, 1904  
Jamestown Exposition, 1907



IS THE BEST,  
STRONGEST,  
COOLEST,  
CLEANEST,  
CHEAPEST,  
AND LARGEST  
SMOKER SOLD  
FOR A DOLLAR

The perforated side grate seen above holds a removable, metal, asbestos-backed fire shell, preventing burning the tin of the outer case, and deflects the air at right angles, preventing back draft to the valveless bellows. The air, passing to the back and over the top, cools and expels the smoke, fanning the burning fuel at top or side till all consumed, giving cool smoke for hours from one filling. It can't clog. No top-heavy cap to choke with soot: no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove its success beyond a doubt, expensive dies making it uniformly perfect as possible to devise. We confidently guarantee full satisfaction or refund the price.

Price, \$1.00; 3 for \$2.50; by mail, add 25c. each

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

1884

Root's Goods always in stock

## FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens.

Root's Goods in Stock

**J. M. Jenkins**

Wetumpka, Alabama

## Dittmer's COMB FOUNDATION

is the best, not because we say so but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

We make a special y of working wax into foundation for cash

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

# Hammer Free!

With Every Order of Supplies of \$5.00 or Over.



This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickelized.

Three per cent discount off all prices in catalog.

## FULL LINE OF ROOT'S GOODS

NO CHARGE FOR DRAYAGE.

**John N. Prothero**  
Dubois, .. Pennsylvania

## At St. Louis

On a  Line

to all points in the South and Middle West.

Send for our free illustrated catalog of  
**Root's Bee-supplies**

We sell at factory prices.  
Send us a trial order.

### Beeswax Wanted.

**Blanke & Hauk Supply Co.**

DEPT. B.  
1009-11-13 Lucas Ave. St. Louis, Mo.

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

**BEES and QUEENS.**—Your orders will be attended to.

**The A. I. Root Company**  
H. G. ACKLIN, MANAGER  
1024 Mississippi Street, St. Paul, Minn.

## North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK**, and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention **GLEANINGS** when you write.

**TEXAS SEED AND  
FLORAL COMPANY**

Dallas, : . . Texas

The Time To Place

Your  
Order  
for

# QUEENS

for spring delivery is here. Order now (with partial payment if not convenient to send all) and state when you want delivery. When ready for the queens, send the remainder. By so doing I shall be able to handle your order without the usual delays incident to the rush orders when the season is on.

|                            | 1      | 6      | 12      |
|----------------------------|--------|--------|---------|
| Untested, in May and June, | \$1.00 | \$5.50 | \$10.00 |
| Untested, after July 1     | .75    | 4.00   | 7.50    |

Selects, 25 cents extra. Tested, May and June, \$1.50; after July 1, \$1.25. Nuclei and full colonies ready May 1. Catalog for 1908 free. Send for one.

GEO. W. BARNES, Box 340, NORWALK, O.

|           | 1                       | 6      | 12     |
|-----------|-------------------------|--------|--------|
| Abhsbaz   | Tested queen.....       | \$1.45 | \$7.00 |
|           | Select tested.....      | 2.00   | 11.00  |
| Caucasian | Select breeding.....    | 3.00   | 17.00  |
|           | Extra select breeding.. | 7.00   |        |
| Banats    | Tested.....             | 2.00   | 11.00  |
|           | Select tested.....      | 2.50   | 14.50  |
|           | Select tested breeding. | 5.00   | 25.00  |

Safe delivery and genuineness of breed guaranteed. Write orders distinctly, especially the address, and indicate by letter the queen ordered.

I. Ivanhoff, Georgievsk, Province Terskaya, Russia (Caucasia).

## Westwood Red-clover Queens

Are the bees that got the honey in 1907.

Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.

## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, \$1; tested, \$1.25. Address New Century Queen-rearing Co., Bercain, Tex. John W. Pharr, Prop.

**W. H. Laws says,** If there is a queen-breeders who can boast of better stock let him trot out the proof. Testimonials enough to fill this book. Will give you only one. Mr. J. C. King, Washington, D. C., writes, "For two years I have had one of your queens in my apiary. Each season she has given me over 200 lbs. comb honey; last season she actually stored while other colonies starved. I have over twenty strains in my three apiaries, but yours is the best."

Now is the time to get a fine breeding queen; stock up this fall and double your crop of honey the coming season. Single queen, \$1.00; 6 for \$5.00. Extra select breeders, \$5.00. Safe arrival and satisfaction guaranteed.

W H LAWS, Beeville, Bee Co., Texas.

**SAVE EXPRESS!** by ordering  
**SAVE FREIGHT!** your supplies  
**SAVE TIME!** in **Boston**

H. H. JEPSON,  
182 Friend St. Phone Haymarket 1489-1



4 LEADING BREEDS of POULTRY

R. C. Rhode Island Reds, White and Silver-laced  
Wandotte eggs per 15, \$1.75; Barred Rocks at \$1.25  
per 15. Muscovy duck-eggs, \$3.00 per 9. Fine Italian  
stand of bees, \$5.75 with queen; tested queen, \$1.25.

Address LAFAYETTE POULTRY CO., ALMA, MO.

# Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead  
of Medina. Write for catalog L.  
No charge for drayage. ♦ ♦

## RAWLINGS IMPLEMENT COMPANY

9 and 11 W. Pratt St. Baltimore, Md.

Big stock of Root Co.'s and Marshfield Co.'s bee-supplies, to make room for my 1908 stock. Deduct 8 per cent till March 31, then till April 30 deduct 2 1/2 per cent; take 1907 or 1908 price list if you have one; if not, send for one. S. D. BUELL, Union City, Mich.



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INCOME

Investigate our adjustable concrete-molds. These are suitable for a large variety of work, such as burial-vaults, watering-troughs, and many other things needed in town and country.

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## PATENTS.

Twenty-five Years' Practice.

CHARLES J. WILLIAMSON,  
Second Nat'l Bank Bldg., Washington, D. C.

Patent practice in Patent Office and Courts.  
Patent Counsel of The A. I. Root Co.

**CUTS** USED IN THIS MAGAZINE  
ARE FROM  
THE MUGLER ENGRAVING CO.  
MUGLER BLDG. CLEVELAND, OHIO.

**FREE!** 50 lbs. Comb Foundation **FREE!**

WEED'S NEW-PROCESS COMB FOUNDATION.

# PRIZES GIVEN AWAY

ABSOLUTELY FREE IN A CONTEST.

**FIRST PRIZE**—25 lbs. Comb Fdn.      **THIRD PRIZE**—5 lbs. Comb Fdn.  
**SECOND** “—10 lbs. Comb Fdn.      **FOURTH** “—5 lbs. Comb Fdn.  
**FIFTH PRIZE**—5 lbs. Comb Fdn.

THE ABOVE PRIZES will be given absolutely free to those who will make the largest number of words out of the letters found in the name "Toepperwein." The letters may be used over as many times as desired, but in no single word oftener than found in the name "Toepperwein." Only words found in Webster's dictionary are admitted. The words must all be plainly written in columns, and numbered.

This contest is absolutely free to any one and anywhere. It is a fair contest, and one has the same chance as the other. These contests are very instructive, and just the thing for schoolchildren to pass the evenings. The contest will close May 1, 1908, and all lists with words must then be in, and in May 15th GLEANINGS the results will be published, giving the names of the winners and all the words of the one who wins the first prize. The winners have the privilege of choosing any grade of foundation. We feel confident that the winners will be highly pleased with the prizes, as the comb foundation is as fine and perfect as any machinery can make, and is made right here in our factory out of this clear Southern beeswax.

Now do not lay this aside and put it off until some other time, but begin right now and start the list. Write the words in a little memorandum-book and carry it in your pocket; and every time you think of another word mark it down. There are a great many words to be made out of the name "Toepperwein," and you have just as good a chance as any one else; so do not let any time go by, thinking some one else may have more words. Now, understand you are welcome to enter this contest, no matter whether you own bees or not, nor whether you are old or young, nor where you live. In case any of the winners have even numbers, then the amounts will be equally divided between such winners.

## ROOT'S BEE-SUPPLIES.

We always carry a large and complete stock of The A. I. Root Co.'s make of bee-supplies at Root's factory prices. Write us for illustrated catalog and price list.

## HONEY AND BEESWAX.

We buy honey and beeswax at all times. If you have any to offer, write us stating quantity you have, quality, and your best price delivered at San Antonio. We also work beeswax into comb foundation by the pound at reasonable rates. We should like to have some business from associations in other States who have large quantities to work up. Our capacity is 500 lbs. per day.

We have just received a set of new machinery, and our *Weed New Process Foundation* is perfect and gives perfect satisfaction everywhere.

Whenever you are in San Antonio make our office your headquarters and let us show you through our plant. Stay here a while and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**UDO & MAX TOEPERWEIN,**  
**1322 South Flores St.**      **SAN ANTONIO, TEXAS.**

**"If goods are wanted quick, send to Pouder."**  
Established 1889.

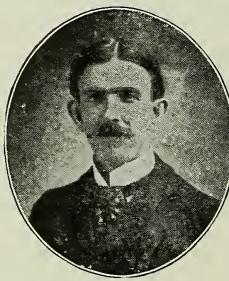
## "Bee Mindful"

*By the Bee Crank.*

The bee is never caught napping when spring opens. It goes to sleep in the fall, dreaming of busy days among the first flowers.

When the bee is so mindful of the "Get Busy" maxim, what a comment on man who forgets the "Never Put Off" doctrine until he stares "to-morrow" in the face.

This timely hint from Nature ought to stick and bear fruit. It ought to send you, Mr. Bee-keeper, out among your hives, taking notes of what you will need this season. These needs should be placed on paper and sent at once to Pouder, the friend of the "rush-order" man.



Quick delivery is one of my hobbies—my favorite one. I am located in the center of population of the United States—at the hub of the wheel, with a railroad following every spoke. That, and my policy of always carrying a full line of bee-keepers' supplies ready for immediate shipment, explains my everlasting sticking to my quick-delivery hobby.

ROOT'S GOODS at ROOT'S PRICES, Danzenbaker hives, section-boxes, metal-spaced frames, bee-smokers, bee-veils, and so forth.

I pay highest market price for beeswax, and a postal brings my new catalog.

## Walter S. Pouder,

513-515 Massachusetts Avenue, Indianapolis, Ind.



# GLEANINGS IN BEE CULTURE

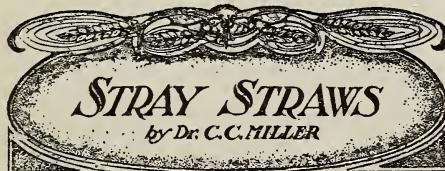
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A. I. ROOT, EDITOR OF HOME DEPARTMENT

Vol. XXXVI.

MARCH 1, 1908.

No. 5



## STRAY STRAWS

by Dr. C. C. MILLER

HAS NOT a frame-spacer (No. 8) got mixed up with rabbit-spacers in A B C and the X Y Z of Bee Culture, p. 208, edition 1908?—a good frame-spacer too.

MOST HUMBLE apologies, Mr. Editor, for misunderstanding what you said, and heartiest thanks for the taboo, p. 200, upon the word "section" when referring to a shallow brood-chamber.

BIENEN-VATER, p. 21, says American bee culture takes the lead because of the frames in use here, the three most important being the Langstroth, the Dadant, and the Danzenbaker. It prefers the Danzenbaker.

HONEY from combs not yet bred in can generally be distinguished easily by the taste from that extracted from dark brood-combs, says F. Greiner, *Bienenvater*, p. 15. [We should be glad to hear from our subscribers on this subject.—ED.]

REV. A. STRAEULI says, *Deutsche Ill. Bzg.*, 7, that Mr. Cowan, who has given Italians high praise in the "Bee-keeper's Guide Book," has written him that he endorses the Swiss Kramer in believing that, with right cultivation, blacks excel Italians in that climate. Rev. Straeuli also says, apparently on the authority of C. P. Dadant, that "there are also in America very good black colonies."

"FORMIC ACID (the acid of bee poison)," p. 202. But—but, don't later authorities tell us that the poison is something else than formic acid, or is there formic acid along with the poison? [You are correct. Later authorities are raising the question whether the poison of the bee-sting is formic acid. It seems to us this ought to be easily settled by

the chemists. If one sting will not be enough for a test, a hundred or a thousand can be secured.—ED.]

V. WUEST, *Deutsche Ill. Bzg.*, p. 8, thinks there is no proof that the nectar of poisonous plants is harmful to bees. He imprisoned a queen and twenty workers, and for three days fed them exclusively on nectar that he took from "crown imperial," well known to be very poisonous, but no harm followed. Like experiments with tobacco and "herbstzeitlose" showed their nectar also harmless to the bees.

ONE SECRET of the success of W. L. Cooper's bee-cellars, p. 214, is the abundance of good air with those four ventilators. A. I. Root is just right as to the importance of fresh air, and lots of it, for man or bee. [We are glad you called attention to this question of ventilation. In looking back over the article we find that Mr. Cooper makes use of a good deal of ventilation, and therein he is very wise.—ED.]

WONDERFUL times, these. After weeks of the most bitter contest in which there was the remarkable spectacle of the Speaker of the U. S. House of Representatives coming in person to help the political bosses to defeat the will of the people plainly expressed by their ballot, the people have finally triumphed, and Illinois has a primary law sending the bosses to the rear, and leaving to the people to say who their candidates shall be.

I AM SURPRISED at the difference between Allen Latham's experience, p. 212, and mine as to feeding thick syrup late. He found 5 to 3 about the right proportion, 5 to 2½ (2 to 1) being too thick for the bees to take well. Years ago I fed much syrup late, and always as thick as 5 to 2, and there was no trouble about the bees taking it. I wonder if there was a difference as to time, or was it the acid I used, or what? [Years ago we fed a 2-to-1 sugar syrup to our bees without any difficulty. The thicker the syrup can be, and yet have the bees take it, the less strain there will be on the bees in evaporating down to the requirements of the hive; for we are beginning to believe that a thick syrup

up, notwithstanding our late expressed opinion, may be better than a thin one which the bees are required at some expense to their vitality to reduce down to the body of ordinary honey.—ED.]

WHEN ROBBING occurs, the orthodox teaching is to lessen the entrance, that the colony may the better protect itself. That heretic, Allen Latham, says in *American Bee-keeper*, 35, that he stopped robbing by making the entrance larger! He explains it by saying that the odor of the honey is less concentrated with the larger entrance, attracting the robbers less. Now comes very excellent authority to his support in that last paragraph, GLEANINGS, 227. [While it may be wise in some cases to widen the entrances of strong colonies we are sure that, in the case of nuclei, it would be folly after the honey-flow to use any thing but a small opening, the smaller the better. We have tried this thing too many times with nuclei to venture risking them again.—ED.]

"TO HEAT a can of honey on an ordinary stove-mat . . . would be attended with a great deal of risk," p. 233. Well, then, take two or three mats. [Three mats might be better; but is there not a possibility that the fire might be so hot that the honey would be injured over the three mats? It is much easier to regulate the temperature of the water heating the honey than that of the mat. As we all know, this question of liquefying candied honey involves the danger of getting the temperature too high while the process is going on. If the honey be melted on the mat, or two or three mats, how can one determine whether or not the honey is overheated? If, on the other hand, it be liquefied in a vat of water, the temperature of which does not go above 130, then you can be sure that the honey has not been heated above that point. But there is another objection: Honey when heated over a mat necessarily has the heat concentrated over a comparatively small area, while the same honey in a vessel immersed in water nearly up to its top has the heat scattered over a far larger area. In a given time, 125° Fahr., when the vessel is in water, would probably do the same work as 140° F. concentrated all in one spot, with the advantage that the 125° would preserve much better the delicate aroma of the honey.—ED.]

A SPACE of  $\frac{1}{2}$  inch between bottom-bars is objectionable in sectional hives because one can not "look up between the combs when the brood-chamber is lifted up." I see; but what good reason is there for having more than  $\frac{1}{4}$ -inch space between bottom-bars between Langstroth frames? [If wider spaces between the top-bars are a decided advantage in the case of a shallow brood-chamber, there ought to be some advantage in a full-depth chamber, though to a less extent. Only yesterday, Feb. 14, we were inspecting an apiary where the bees wintered outdoors. The owner, in order to give me an idea of what was going on, tilted one hive off the bottom in order that we might look under.

The bottom-bars of this hive were  $\frac{1}{4}$  inch wide, leaving a space of  $\frac{1}{8}$  inch between the bars. One could easily see quite a distance up between the combs. Now, suppose between the bars there had been a space of only  $\frac{1}{4}$  inch; think you we could have obtained as satisfactory knowledge of the condition of the colony?

Some years ago when this question came up we called for a show of hands from our subscribers. The general verdict favored a bottom-bar  $\frac{1}{4}$  inch wide, for the very reason here given. A bottom-bar  $\frac{1}{8}$  inch square was considered better still in one respect in that it favored the building of comb clear up to the bar; but too many times the combs were built beyond and therefore  $\frac{1}{4}$  inch was regarded as the golden mean.

It follows then that bees are more inclined to build comb down to a bar  $\frac{1}{4}$  inch than to one  $1\frac{1}{2}$  inches wide. But you say that is of no consequence with you because you use full sheets of foundation running clear to the bottom-bar, stayed with wooden splints; but the majority of bee-keepers do not use such full sheets.

Unless we are very much mistaken, doctor, you are in a very small minority in using and recommending a bottom-bar as wide as the end-bar, which, as we remember, is  $1\frac{1}{2}$ . At all events, if you use  $1\frac{1}{2}$ -inch spacing from center to center, this would make the bottom-bars as well as end-bars  $1\frac{1}{2}$  with a spacing of  $\frac{1}{4}$  inch between.—ED.]

ONE MAN SAID at the National convention that he put his bottles of honey in a water bath warm enough so he could stand having his hand in it—about 140 degrees. Another man said that would take the skin off. I thought I would find out. Took a dish of water at 134 degrees, held my hand in it for 5 seconds; at 133 I held it 10 seconds; at 130, 15 seconds; at 125 I could let it remain permanently. Then I raised it to 140 degrees and held my hand in it 5 seconds; but it was pretty hot. All hands, however, are not alike. [Why didn't you hold your hand in water heated to a temperature of 140 longer than five seconds? That is not holding your hand, but dipping it in water and taking it out almost immediately. We still insist that the average person—no, we will say the average man—can not hold his hand in water heated to 140 Fahrenheit, without having the skin come off. There is a great difference, however, in persons. For instance, Mrs. Root will hold her hand in water quite a number of degrees hotter than your humble servant. How do we know? When suffering from a severe headache she will wring a cloth bandage out of water so hot (and do it with apparent comfort) that would remove the skin from her husband's hand. The same temperature will not affect her hands in the least.

Some years ago, when we were heating water with a steam-pipe to scald out infected hives, we found we could not get it much above 180, and consequently we gave up that method of heating water to scald out the hives; but during these experiments we

carefully tested the hands in water at various temperatures, because we had heard bee-keepers say so many times that honey must not be liquefied in water hotter than may be born by the bare hand. A temperature of 140 was too much for us, and, like you, we could not bear the hand for any length of time in water hotter than 125 degrees; but we suspect that your wife might be able to stand it considerably hotter. As a general thing we think it much safer and better to refer to actual degrees measured by a thermometer, for then there will be no danger of injuring the flavor of the honey. A temperature of 140 degrees, if prolonged, affects slightly the bouquet, hence 130 or even 125 would be still better.—ED.]

I'VE LIVED to see the time when a President of the United States dared to say a word against the saloon in his message. I give it at second hand. A newspaper man was interviewing Rev. A. C. Dixon, pastor of Moody's Church, Chicago:

The minister reached for a newspaper containing President Roosevelt's message in full. He glanced through the long columns and finally came to something that held him.

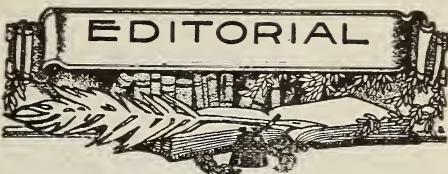
"Ah, here it is," he announced. "I do not suppose one man in 10,000 knows that the President says something in derogation of the saloon in his message, but he does. Let me read: 'Just as the blackmailer and bribe-giver stand on the same evil eminence of infamy so the man who makes an enormous fortune by corrupting legislatures and municipalities and fleecing his stockholders and the public, stands on the same moral level with the creature who fattens on the blood money of the gambling-house and the saloon.' There it is, right there—gambling-house and saloon, and I am mighty well pleased to see the President of the United States placing the saloon in the right place and condemning it as he has. I do not know that other Presidents have had the courage to mention the saloon, but Roosevelt did, and he is entitled to the thanks of the law-loving people of the land."

IN GERMANY an advertisement appeared offering for 25 cents to send a recipe for making 2 lbs. finest honey from 1 qt. of buttermilk. Remittance of 25 cents brought the instruction to add 1 lb. of sugar and boil slowly two hours, stirring constantly, in a brass, copper, or enameled kettle; but the enameled kettle must not be cracked inside. Pretty good for a German; but a Yankee fakir would follow it up with an advertisement offering for 50 cents to sell a recipe to produce for less money a better honey than the buttermilk thing. The recipe would read, "Go to a grocery and buy it." "That wouldn't cost less?" Figure up and see.

1 qt. buttermilk..... 1 cent.  
1 pound sugar..... 5 "  
2 hours stirring at \$1.50 a day...30 "

Cost of 2 lbs. buttermilk honey....36 "

[These so-called artificial honeys, unless glucose be made the main constituent, cost considerably more than genuine honey. But glucose can not now be used except as an adulterant, the mixer to consume it in his own family. Or if sold for general consumption it must be used as a mixture of honey and glucose, stating the mixture of each.—ED.]



MR. E. E. COVEYOU, in the last *Review*, shows a practical scheme for filling square honey-cans automatically, and shutting off the honey-gate just the moment the honey reaches a certain level in the can. We hope to illustrate it later.

THE editor of the *Review* is somewhat skeptical as to the success of the plural-queen system, saying he can not see any thing to balance the labor and cost. He admits that the scheme may be possible but not profitable. This is an open question, and we will allow the discussion to continue for a time longer.

#### LABELING THE WEIGHT.

SWIFT & Co., the meat-packers, have begun a suit to test the legality of the Nebraska pure-food law which compels them to label the weight on ham and bacon pieces. Comb honey in sections would seem to come under the same category—at least, if a ham has to be labeled, a section of comb honey ought also to be.

W. K. M.

#### OUR SPECIAL SPRING-MANAGEMENT NUMBER.

ONE of our late advertisements states that our symposium of articles on spring management will appear in our issue for March 1. We did not discover the error until it was too late. The series will appear in our March 15th number, and it will be well worth reading, as the articles comprise many valuable hints and suggestions from our veterans in the field.

#### A WORD TO OUR SUBSCRIBERS—ESPECIALLY THOSE WHOSE SUBSCRIPTIONS MAY HAVE EXPIRED.

THE editor has been going over our list of subscribers, and has been very much gratified to see that it is well paid up. The number of delinquents—that is to say, those who have not paid up arrearages or back subscriptions—is very small. We were surprised, also, to notice how large a number have paid in advance—some clear up to and including 1915. One man in particular paid for twenty years ahead. So many of the number having paid in advance leads us to believe that our journal is appreciated. We have no doubt that those who are behind like it just as well, but perhaps have neglected to send in their back dues.

It is not nor has it been our policy to continue sending our journal after the time paid for to any particular person unless we consider him responsible, and believe that he desires its continuance. The few delinquents

that we have we consider to be people who will renew again, paying cash for all back subscriptions, and a substantial advance. But according to a recent ruling of the Post-office Department we shall be no longer permitted to send *GLEANINGS* after the time paid for, except under certain conditions. The Department appears to have no desire to handicap publishers who are sending out a legitimate publication to *bona-fide* subscribers; but it is, in a very substantial way, recording its stamp of disapproval against sending any publication, especially one of the cheap class designed for advertising purposes, to people who may not care for it. Or, to put it another way, Uncle Sam says no publisher shall try to force a paper on to some one who has not ordered it, and then try to collect payment by coercion — and he is right.

*As we do not wish any subscriber to lose a single copy of the journal, we respectfully request all delinquents who know they are behind in their subscription to send in their remittance at once.*

#### HOW THE PURE-FOOD LAW WORKS.

The following excerpt from the *Detroit Free Press* will explain as well as any thing can just how the pure-food laws help the honey-producer:

#### LOOK FOR "NEAR HONEY;" MANY BARRELS OF SPURIOUS PRODUCT CONFISCATED BY FEDERAL OFFICERS.

Acting upon instructions from Washington, Deputy United States Marshals Cassius P. Taylor and Duncan Lyons started out yesterday afternoon to seize large quantities of "near honey," which is said to have been passing for genuine strained honey with many wholesale users of the article in Detroit and other cities throughout the country.

The manufacturers of the alleged spurious article are said to be Rogers & Holloway, of Philadelphia, and it is in a crusade against the manufacture of what is said to be a mixture of cane and honey that the seizures are being made in many places.

Eight barrels of the stuff were found in one factory, where it has been used in composition with other articles; six barrels in possession of a commission merchant; nine barrels at another manufacturing plant, and 200 cases of fifty pounds each at still another factory.

This composition, if sold to the public, is in violation of the federal pure-food law. The quantities confiscated in this city will be held pending the outcome of the case against the manufacturers. W. K. M.

#### CORN SYRUP VERSUS GLUCOSE.

APPARENTLY the glucose people have won out in their contention—that is, the privilege of calling glucose "corn syrup." When Dr. Wiley and his associates rendered an adverse decision, the glucose interests bombarded the Board of Food and Drug Inspection, Secretary Wilson and President Roosevelt, asking for a reversal of the ruling. A decision has finally been rendered, favoring the glucose interests, all the members of the Board of Food and Drug Inspection agreeing, including Secretary Wilson, Cortelyou, and President Roosevelt, Dr. Wiley alone dissenting. We are surprised at this, because if the anti-glucose interests had put in a strong protest the result would have been different.

We suppose this means that the glucose

interests may continue to label their product "corn syrup," which name has not obtained such an unsavory reputation as glucose. The bee-keepers of the country made a vigorous protest, but, apparently, without effect. After all, it will be only a question of time when it will be discovered that "corn syrup" is no more palatable than the same thing under the old name—glucose.

#### THE DEATH OF TWO VETERAN BEE-KEEPERS.

In our last issue, in the department of Special Notices we announced the death of the veteran Henry Alley, practically the last representative of the early days of modern bee-keeping in the United States. We regret to record also the death of the veteran E. France, father of N. E. France, General Manager of the National Bee-keepers' Association. He was 84 years of age at the time of his death, the same taking place on Feb. 7, at 9 A.M. He was quite a prominent writer for *GLEANINGS* in the early 80's. We hope to be able to give an extended sketch of both, perhaps in our next issue.

#### LIQUEFYING CANDIED COMB HONEY WITHOUT MELTING THE COMBS.

We are experimenting on a method which we hope will enable us to liquefy honey candied in sections without at the same time melting the combs.

The plan involves nothing more nor less than keeping the sections of candied honey at a temperature of 100 or 102 degrees for a week at a time. A four-days' test of sections placed in a large incubator set at a temperature of 102 shows that the honey is rapidly liquefying without destroying the combs. We hope that, in a few more days, the honey will be perfectly liquid and the combs intact. Of course, where the cappings are cracked there will be nothing in particular gained in bringing the honey back to a liquid condition.

The principle can be carried out on a large scale by constructing a room and having the same heated by means of a steam coil or coils, or a furnace. The temperature of the room must be uniform in every portion, and uniform throughout the day, and it must not go above 102 degrees.

Do not jump to the conclusion that this is going to prove to be an unqualified success. We don't know. Just wait until the next issue and we will tell you how it works. If a success it will save hundreds—yes, thousands—of dollars on comb honey made unsalable by reason of candying.

#### STRAWBERRIES PRESERVED IN HONEY ONLY.

We have just been eating some strawberries preserved in nothing but honey, put up by Mrs. Frank McGlade, Hebron, Ohio. The jar from which we took the fruit was labeled 1906; yet on this 11th day of February, 1908, there was not a particle of mold on top. We are of the opinion that the berries would have kept several years longer.

Mrs. Root remarked that these strawberries, unlike those preserved in sugar syrup, had almost their natural color. This is all the more remarkable because the jar has been standing on the desk of the editor, in the full glare of three windows through which the sun often streams in. The temperature of the office seldom goes below 70°, and yet this fruit has stood thus for nearly two years. Had it been put in a cool dark cellar the natural color would have been still more pronounced, no doubt.

It will be remembered that Mr. Frank McGlade wrote an article on preserving fruit in honey. Referring to these particular strawberries, and how they were put up, he said:

Our own experience here in our home has been very satisfactory in the use of honey in canning and for making preserves. Of course, we do nothing in a commercial way, but every year Mrs. McGlade puts up whatever fruit she desires, in honey—strawberries, currants, peaches (canned and preserved), and jellies. Strawberries preserved in honey are about as fine eating as I ever expect to get in this present life. As to the keeping qualities, we have them of various ages—two and three years old, and none spoil. The fruit is handled the same as when sugar is used. We have put the honey over the fruit and let it stand all night before cooking; again, after the fruit is cooked the honey has been put in. Either way proved entirely satisfactory. We use about the same amount of honey as of sugar. If you can make preserves, jellies and jams with sugar you can with honey. There certainly is an excellent field here for an enterprise in a commercial way which can not help yielding large returns. The people are willing to buy that of which they have the assurance of purity.

For further particulars the reader is referred to page 1176, Sept. 15, 1906.

#### SOME OF THE SILLY ARGUMENTS AGAINST PARCELS POST.

ALL sorts of criticisms have been and are being hurled at the parcels-post proposals. The latest is that it pays only in countries having a small area. For example, the *Irrigation Age*, which is an excellent paper, compares the British Islands with Ohio, Indiana, and Illinois, which latter are 12,000 square miles larger than the Britannic Islands of His Majesty King Edward.

These critics forgot that the British parcels post extends over an area three times as large as the United States. It embraces Canada, West Indies, Australia, India, South Africa, Central Africa, and various other colonies, so that this criticism has no foundation on which to rest.

In the instance of France, the case is not much different. The word "France" includes Algeria, an immense country, the French West Indies, and Indo-China, an area of land as large at least as the United States. But we can go nearer home, for Uncle Sam has a parcels-post service with many countries. We have every reason to believe this service is done in first-class style and at much lower rates than any express company would do it; and a curious fact in this connection is that the foreign rates for parcels post are lower than the domestic. To make this clear we will instance an hy-

pothetical case. If The A. I. Root Company wants to send 4 lbs. of foundation to a customer in Ohio the charge is 64 cents; but if the customer lives in Central America, or some other far-away country, the charge would not exceed 48 cents.

We understand that Senator Platt, who "owns" two express companies, has already boasted that there would be no parcels-post legislation at this session of Congress. The National Grange is behind this movement, and it is bound to win. It would go through a good deal sooner, however, if the farmers would give their Congressman to understand that they fully expect him to do all in his power to help this reform in our postal laws, for it is only a reform, nothing more. We have parcels post already, and have had it for years; but the rate is too high for it to be a success. It was purposely made so to suit the express companies; but the necessity for protecting their business has long since ceased to exist.

#### THE COST OF PARCELS POST.

One of the stock arguments against the parcels post is its cost, and quite a number are being misled into the belief that it will result in a great postal deficit. Now, what are the facts? Great Britain, with an immense business at very low rates, has an annual postal *surplus* now of not less than \$20,000,000, and in one instance we believe it was \$35,000,000. Germany also has a very liberal parcels-post arrangement, and her annual *surplus* over all expenses is nearly \$15,000,000. France usually has a postal *surplus* of something like \$10,000,000, though she too has liberal parcels-post facilities.

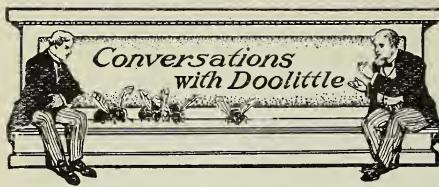
It is the United States which has always a postal deficit which Uncle Sam's treasury has to make good. Parcels post would, to a very great extent, stop this deficiency, and put the postoffice on a paying basis. Many small postoffices would begin to pay or hold their own if we had a true parcels-post system such as a great nation ought to have.

In any event, bee-keepers have a use for a parcels post; so have the egg-raisers; and even the butter-makers can despatch their goods by parcels post to customers. We are going to have it.

#### PARCELS POST IN THE SENATE.

Senator Burnham, of New Hampshire, on Feb. 10 introduced a bill in the national Senate authorizing a parcels post on rural routes. The bill has the endorsement of President Roosevelt and Postmaster-General Meyer. It provides for a rate of 5 cents for the first pound, and 2 cents for each additional pound. The limit is 11 lbs. On the same date Senator Kean, of New Jersey, introduced a bill providing for the lowering of the present parcels-post rate from 16 to 12 cents, and increasing the maximum weight from 4 to 11 lbs. It seems to us the rate of 12 cents is oppressive, and might with great propriety be reduced to 8 cents per lb., and probably a flat rate of 5 cents would pay the best of all.

W. K. M.



## STUDYING THE MARKET.

I want you to tell us in GLEANINGS something about marketing honey. If I succeed in increasing my bees, as I hope to do, what am I going to do with my honey? Because you old 'vets' know how to do these things, don't soar so high that the beginners are lost from sight.

E. M. BROWN.

Well, perhaps we old writers do lose sight of the beginners to a certain extent in our writings: but I had always considered that GLEANINGS gave a fair share of its space to those who were in the A B C of apiculture. I know that, when referring to the management of the apiary for a crop of honey, the common advice is to study one's field, as well as the bees, so that the field and the bees may be brought together in such a way that the best results can be secured. But I am confident that we should just as thoroughly know our field for marketing, so that our honey and the field may be brought together as effectually for the best results as are the bees and the field.

Producing a crop, without the least idea of what is going to be done with it when produced, is a fault not confined to the bee-keeper alone. The agricultural masses are as often afflicted in this way as are the apiculturists. I should like every reader of GLEANINGS to consider this matter fully, if he has not done so already, for on our ability to market our honey crop successfully turns much of our happiness and success in our apicultural life, to say nothing of the contents of our purse or bank account. Study this matter thoroughly; turn it over and over again, if need be, till this matter of marketing strikes down as deep into your very being as has anything which has been the most interesting to you about the bees, for on it hangs one of the greatest secrets of successful apiculture. On the folly of working from early morn till late at night, day in and day out, only to throw the larger part of it away because the whole mind is bent on a big crop, instead of how much we can secure from the crop after it is obtained! Such a course is only on a par with several of the farmers I used to know when a boy, who would go into the woods in late fall and early winter and pick up all of the fallen wood about their woods, cut it into stove length, and carefully pile it, so as to *save all that was going to waste*, and then leave those piles of wood, many of them, to rot down, rarely using it afterward. I used to ask myself the question, "Would it not have been better to allow the wood to rot without such great expenditure of human energy rotting with it?" Then many would make butter at a great expense of feed, milking

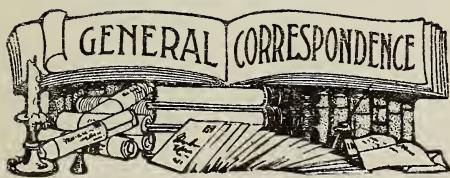
cows, skimming milk, making the cream into butter, and carefully packing the same into tubs and firkins, only to have it stand in some poor cellar or other place, before selling it, till it was nearly spoiled, when the whole had to be sold for a song. Of course, under our present-day state of affairs, with the timber nearly all cut off, and our butter being made almost wholly in creameries, this lack of ability in the farmer has been largely overcome, but scores and scores of our bee-keepers keep right on dumping their honey on the town and city markets for "what it will fetch," with no thought regarding a better market or the great injury they are doing others through their paying no attention to this part of the bee business. Far better, produce only half as much, with only half the cost in expense and labor, while being alert in the selling of the same, thus securing equal results without the wear and tear of producing a big crop.

All of our bee-keeping work should be done with an "eye single" to the turning of the finished product to the best possible advantage to us and ours—not that I ever wanted to receive more for my product than would be honest between man and man, but I do think that we should do all that is possible to keep the price up to a parallel to what we have to buy. An even exchange is said to be no robbery. In those early days of my bee-keeping, butter and honey went hand in hand, and I thought that I was in no way robbing my brother-farmer when I let him have as many pounds of my fancy white-clover and basswood honey as I took of his gilt-edged butter in exchange. But under this present age of "creamery extras" he takes more than *two pounds* of my fancy section honey for one of his butter, because he has a chance to do this on account of our having passed from the days of barter to the dollar system. However, if we turn our eyes to sugar, which, on the "sweet-for-sweet" idea, may be a nearer parallel, we find that our honey has a greater purchasing power than it had forty to sixty years ago. With honey at 25 cents and sugar 12½, we got two pounds of the latter for one of the former; but now, with sugar at 5 cents and section honey at 15, we get three pounds of sugar for one of honey. I have used only these two items to give us something of an idea of what our knowledge should be based upon in calculating the market price where our honey is disposed of in our home market.

Before our crop is produced we should be calculating what we are going to do with it. We want to have some idea of whether we can sell it at home, or whether we shall have to send a part or all of it to a distant city. We want to consider the ability of our neighbors to buy. The most of us are not fortunate enough to have wealthy customers who can buy our honey at any price. Most of our neighbors are, like ourselves, buying the necessities as cheaply as possible, and doing without the luxuries. If wheat and potatoes are cheap, and wages low, those about us who would buy honey will buy sugar if we

do not give them some inducement. Then it is best not to forget that hard times are harder on a large per cent of the city people than on the producer, and hardest of all on wage laborers.

Now, having, to a small extent, studied the situation, let us try to do what is *right* as well as what we can. If the distant cities will not pay us good prices it is better to decide that the poor at home have as good a right to "cheap eating" as those with large capital. The poor man's dollar should buy just as many pounds of honey as the rich man's, and the poor man can have a chance if you tell him in your local paper or by a sign at your gate that your honey can be had at the low price of the city markets, less the cost of freight and commission. Don't try to add these on him; for if you shipped the honey, *you* would have these to pay. I find one of the troubles about marketing our honey at home, right among our own friends and neighbors, is that, like many of our farmers, we will not sell it unless we can get as much for it at our door as it will bring in the distant city market. Let us be reasonable and honest in all our marketing projects, whether others are or not.



## YELLOW VS. LEATHER COLORED ITALIANS.

**A Few Words in Favor of Yellow Italians; Keeping the Brood-nest Clear of Honey to Make Room for Brood.**

BY E. W. ALEXANDER.

For some time many honey-producers have shown a preference for the darker or leather-colored Italians. This would be all right if it were not that they have a tendency to degenerate back to hybrids and blacks when continued a few years. It is the same with bees as with all our domestic stock. We must have a standard to work for, and the color line seems to be very essential in our horses, cattle, swine, and poultry. Now, if we fail to keep up to well-marked Italian bees as a standard, then unprincipled queen-breeders can send us their hybrid mated queens; and we, not having any fixed standard as to color, will have no chance to complain, as they can say they sent us queens of their dark Italian strain.

I for one have my doubts if any of the dark strains of Italians are superior to our three and four banded bees—that is, taking them as a whole in large apiaries there are occasionally some exceptions in each class; but one thing we must all admit; and that is,

Italian bees are far ahead of our blacks or hybrids in gathering honey; but in order to acquire the best possible results we must give them in some respects especial attention. Their never satisfied desire to gather honey causes them to fill the brood-nest early in the season; but if this honey is frequently removed so as to give the queen a chance to fill and keep filled all the combs below the supers with maturing brood, then you will soon have a large working force, and you are then quite sure to get a nice surplus; but if you neglect to keep this honey out of the brood-nest, then you will have a weak colony and little or no surplus, which will cause you to become prejudiced against all yellow bees.

Next season make it your especial business to see every comb in all your colonies before you put on your supers. See that each one is full of brood from top to bottom and end to end; remember that each square inch of capped honey in those breeding-combs costs you about 30 worker bees every 21 days.

The convenience and time saved in looking up twenty or more queens a day, as we frequently do during the summer season, is quite an item in favor of yellow bees. Some think these bees do not winter as well as the darker ones. I find that, where this is the case, it is caused by the Italian bees crowding the brood-nest with honey in August so as to stop all chance for breeding after Sept. 1; consequently they go into winter quarters rather weak in bees; and those they do have are mostly old and nearly used up. If you will remove two of the heaviest combs about Sept. 1, and put in the center of the hive two good empty breeding-combs the queen will fill them with brood, and your colony will be much stronger and better in the spring.

Still another thing in favor of our yellow bees which is of more importance than all other things combined is the fact that they are almost immune to that destructive disease known as American foul brood. Those of us living in this part of New York, who lost thousands of colonies a few years ago from the effects of that disease, know well how much we owe to those yellow Italian bees; for without them the production of honey in this part of the State would be a thing of the past. Sometimes I think the great loss we sustained was a blessing in disguise, for now we have better bee-keepers, better bees, and are securing far more surplus annually from our Italian bees than we ever procured from the black and hybrid colonies we used to keep.

When dividing or forming nuclei it is frequently quite difficult to keep the darker strains from returning to the old stand; but not so with the golden Italians. I find that, if they have some brood, or a queen of any kind, they will stay wherever we put them. This is a good point, and often saves much trouble; then they will defend their hives from robber bees the best of any I have ever had.

Give these bees the special care they require and you will be surprised at the good surplus you will receive during poor seasons.

Almost any bees will give us some surplus during a good season, but it is the well-bred bees that give a surplus every year. They will find nectar though they may have to go several miles for it.

Now, don't think we have either bees or queens for sale, as we have not. I write the above only according to our experience in keeping bees of all shades of color from the genuine black to the yellowest Italian.

I might cite many more valuable traits that are well developed in those yellow bees, such as having but little desire to swarm, and breeding up fast in the spring. This is very much in their favor, as they keep their brood so compact that comparatively few bees are required to feed and keep it warm. Then it is easily proven that they cover a much larger field in search of nectar than the darker strains. I have often found them a mile or more further from home than the other bees.

With our well-bred Italian bees we now have good stock to work from; so let us unite in trying to improve them along the lines most necessary in developing a superior all-purpose strain of bees. This can be accomplished to a great extent in a short time; then bee-keeping will become more reliable, more profitable, and a much pleasanter occupation. It has been a long hard task to free it from the rut of ignorance and superstition of past ages; but we have at last placed it well forward among the intellectual pursuits of rural life; and now let us be careful and take no step backward that will check its forward progress along with other successful agricultural pursuits.

Delanson, N. Y.

#### THE STORM-DOOR FOR BEE-HIVES.

##### Its Origin and Use.

BY A. J. HALTER.

On page 97 you refer to storm-doors as illustrated, patterned after suggestions of Mr. Doolittle. I would say that I used some about two years previous to Mr. Doolittle's suggestions as stated in GLEANINGS in 1906.

Last spring I purchased from Mr. J. P. Noland, the nurseryman at Peninsula, Ohio, his entire outfit of bees and hives, among which was a similar device for the Langstroth hive, made about fifteen years ago. He called my attention to its use in 1902; but as I had only a few colonies I did not consider the value of storm-doors until I realized the heavy loss of bees by having a free entrance, and I made a model as illustrated on p. 321 of our issue for March 1, 1907. For those using a reversible bottom-board placed close to the ground I would suggest cutting a notch in the lower side of the ends so the center will rest flush on the floor-board. However, if so applied be sure to leave several inches in front so as to leave an alighting-board for the benefit of bees that return in a chilled condition.

The theory of storm-doors is not new; but

its value will be more appreciated when once brought into general use.

##### THE ALLEY TRAP NOT THE PANACEA FOR CATCHING SWARMS.

On page 19 you make reference to Mr. Taylor's system of using a queen-trap in preference to clipping queens to prevent swarms from escaping.

Good results can be obtained by limited use from a great many devices, as also entire systems; yet if applied universally, or relied upon to a great extent, evil results are often the reward. While there are flaws more or less in almost every undertaking, there are certain rules which, if carefully observed, will bring better results in accordance to requirements.

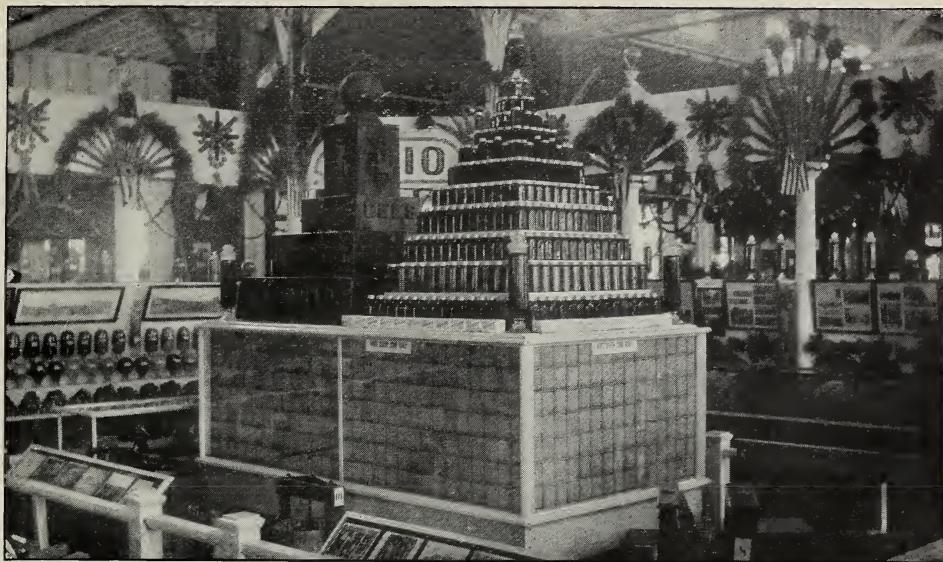
Mr. Taylor does not mention details as to queen-trap usage; and the question arises in my mind, "How can you manage a given number of yards with only one or two visits a week, simply relying on queen-traps?" Suppose all your colonies are equipped with traps. After an absence, say, offive days you come to examine the apiary, is it not necessary to overhaul every trap and let out the drones? and, if you find a laying queen, you undoubtedly feel somewhat gratified; but as you go on further there is a trap containing a virgin. Was it a case of swarming, or have you detained her from her wedding-trip? At any rate you decide to give another trial; further swarming takes place; but before you can make another visit heavy rainstorms and chilly weather intervene and you find traps full of dead drones, perhaps also some dead queens. You will begin to wonder where you are "at."

For a number of years hives with a portico have been deemed unfavorable, being conducive to swarming. Is not a queen-trap a select place for bees to cluster and dream of the happy land which they desire to acquire by swarming?

Yes, bees, when several swarms issue at the same time under the clipped-queen system, will occasionally cluster together when a virgin emerges; and in order to prevent escaping it is necessary to hive them; but this is true in almost every instance when queens are not clipped; viz., "to hive the swarm;" and how disastrous when several swarms with laying queens cluster together, and the victorious queen destroys the others, among which may be some of your choicest queens! The virgin swarms are comparatively small in proportion to laying-queen swarms under the clipped queen system if properly conducted, the age of queens being a marked feature, as also the foretelling of swarming by outside observation.

Queen-traps are very convenient when hunting a queen by shaking bees in front of the hive or catching undesirable drones or minor temporary usages. The modern apriarist, however, is more likely to adopt some system which will give ample protection in his absence, rain or shine, something that will master the situation in outyards as well as carefully guarded apiaries.

Akron, O., Jan. 24.



THE A. I. ROOT CO.'S EXHIBIT AT JAMESTOWN, VA.

## SOME HONEY-EXHIBITS.

BY E. R. ROOT.

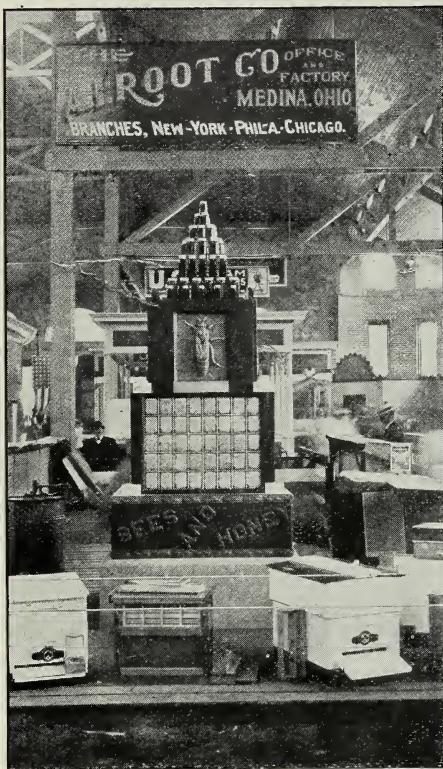
In the views given we are showing beeswax and honey-exhibits put up during the past year by The A. I. Root Co. The one above, at the Jamestown exposition, was put up for and in the name of the State of Ohio, and was, in fact, a part of the agricultural exhibit, and by no means an inconspicuous part either. Unfortunately the

light did not allow the exhibit of wax to show up properly. The other exhibits were in the name of The A. I. Root Co. at the Ohio State Fair, Columbus, last September.

Mr. Jesse A. Warren, who has charge of exhibit work, has given the question of bee, honey, and wax displays a great amount of study. He has in mind in every case not only the artistic and the attractive but the educational feature as well. In both exhibits it will be noted that he has carried out these ideas. Besides live bees in observato-



THE A. I. ROOT CO.'S EXHIBIT AT THE OHIO STATE FAIR.



THE A. I. ROOT CO.'S EXHIBIT AT THE OHIO STATE FAIR.

ry hives, he had a large collection of photographs illustrating the various phases of bee culture; and directly under was an explanatory note. Thus it is that a visitor can get a comprehensive view of the business in a very few minutes, even though there be no one present competent to explain. The Ohio bee and honey exhibit at the Jamestown exposition was one of the most interesting displays in the States building.

The queen-bees and the old-fashioned straw skep in wax were first made out of clay by a professional clay-modeler. A plaster cast is then taken, from which wax molds are turned out in any quantity. It is a difficult thing to make a queen-bee so that it will "draw" out of the mold; but we succeeded in doing it perfectly.

#### HIVES ON ELEVATED STANDS.

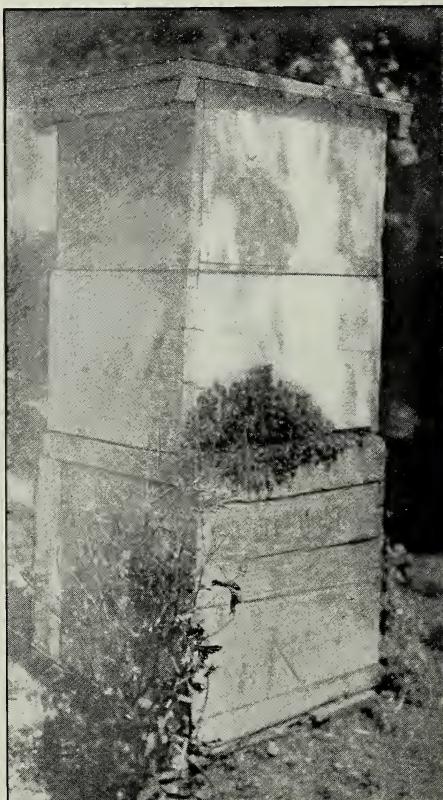
BY W. A. PRYAL.

"Hives of high and low degree," as if there could be any such social distinction among the hive fraternity! Yet there are high hives and there are low hives; and there are hives low upon the ground and there are hives high from mother earth.

For a long time we have been impressed that it is well to have all colonies of bees near the ground; that it is easy for the bees, should they fall to the earth, to crawl back to their hive via a short alighting-board. That is well and good; I have most of my hives that way, for it is the cheapest way to have them. But I have had a few perched up a bit and I like the plan very well. The older I get the less I like to stoop over the low-down hives.

In the photo I show one of my hives—it is not my regulation hive; it was one hived in a super, and another super put above as a *super*. But it is the pedestal that I call attention to. It was a receiving berry-chest and forms the bottom-board as well as the alighting-board of the hive. I notice that a bee that has not got its "bearings" well figured out, and drops short of the entrance, will alight against the side of the pedestal, and without loss of time crawl up to its home. It is very seldom that a bee misses getting a foothold upon the pedestal alighting board. I think their chances of doing so are as good as if not better than in falling upon the low-arranged board so much in vogue.

The objection that might be made to a hive so placed is that it would be more likely to



PRYAL'S ELEVATED HIVE-STAND.



THE BRANT DISTRICT BEE-KEEPERS' CONVENTION.

be tipped over than one set closer to the ground. This is true, but when solidly set up there is little likelihood of their being thrown over. When interspersed with a few low-set hives, they make an apiary more picturesque. I have found that all hives I have up on stilts seem to do better than the colonies that are near the ground. But what a pleasure it is to go to one of these hives and stand at the rear and manipulate it without any back-racking tortures!

In connection with the photo I will here state that not only are the hives or supers shown made of our western or Oregon spruce, but also the big box forming the hive foundation. This wood is the worst on the coast to check; even when painted it is not rendered proof against this evil. The hives were painted with two coats of lead and ocher.

The plant growing at the left of the hive-stand is our well-known alfalfa or pin-weed, one of the best early honey-plants we have. It is seldom a specimen of this plant is found growing so erect as the one here shown.

Oakland, Cal.

[While it is much more convenient to handle hives elevated from the ground, yet in localities subject to chilly or freezing weather, such elevation causes a large loss of bees, for the reason that many bees coming in partly chilled drop short of the entrance. If such bees can crawl into the hive by an easy grade they will be saved. If, in order to get into the hive, they must take wing, this they will not do, because they are too chilled, and consequently are lost.

We are satisfied that there are heavy losses in our northern States in the spring and fall from this cause alone, and any bee-keeper in such States who fails to provide easy runways into the hives, close to the ground, is wasting many dollars. In a climate like that of California there would not be such losses, and in that case convenience should be consulted by having the hives elevated.—Ed.]

#### BEE-KEEPING IN CANADA.

The Brant District Bee-keepers' Convention; a Discussion on Feeding; Fall Packing for Winter; Thick vs. Thin Syrup; Acid or No Acid.

BY R. F. HOLTERMANN.

At the head of this page is an illustration showing some of those who attended the Brant District Bee-keepers' convention. Its standing is between a county and a Provincial or State convention, and the success of these meetings has been so marked that year by year a larger number are in attendance.

Among those present this year were Mr. L. A. Aspinwall, last year president of the National Bee-keepers' Association, and this year president of the Michigan State Association; Mr. O. L. Hershiser, Buffalo, N. Y.; F. J. Miller, president Ontario Bee-keepers' Association, who is also president of the Middlesex Bee-keepers' Association, London, Ont.; W. A. Chrysler, Chatham, Ont.; D. Anguish, Lambeth; Wm. McEvoy, Wood-

burn; R. H. Smith, St. Thomas; F. A. Gemmill, London; A. Laing, Hamilton, and Mr. Tebbs, manager Boys' Home, Hespeler; Mr. Chris. Edmanson, president Brant Bee-keepers' Association, who occupied the chair during the opening session.

#### WHY IT PAYS TO USE ALL-SUGAR STORES FOR WINTER.

The subject for discussion was, "Natural or Artificial Stores—which? when supplied and where placed?" Before giving briefly some of the statements made, let me say that, as a result of one or two seasons where great loss has been occasioned, in part, at least, by inferior natural stores for winter, there was an entire unanimity of opinion among the members that it was desirable to give bees sufficient *artificial* (sugar) stores to carry them through the season when, by reason of long-continued cold, they were confined to the hive.

I was taken back to my early bee-keeping days of some twenty-six years ago when a somewhat similar disaster took place followed by discussions upon the wintering problem, the pollen theory, and the advocating of sugar syrup for winter stores for bees.

Captain Hetherington once said that *he did not winter with uniform success until he fed each colony enough sugar-syrup stores to carry them through the winter.* Just here I would endorse the sentiment of the captain. If those in sections far enough north so that the bees are confined to the hive for two, three, or four months, would provide each colony with, say, 15 lbs. of sugar-syrup stores, the entire bee-keeping industry would undergo a change. It would become an industry of greater stability. But what is one man's poison is another's meat. A word to the wise is sufficient.

#### WHY FEED IN THE FALL.

Mr. F. T. Adams, Brantford, opened the discussion by stating that he remembered well the time when he thought it an extravagance to spend money on feeding colonies sugar syrup in the fall. He depended on spring feeding; and if the weather was not suitable in the spring the bees were not fed, and under such conditions they often perished. He now advocates feeding heavily in the fall so the bees will have plenty of stores until sufficient honey comes in the following spring. He considers *early* spring feeding bad because it breaks the cluster in the hive, excites the bees; and often the brood, which the bees begin to rear, is abandoned before maturity, and destroyed. He likes to feed as early in the autumn as possible, before cold nights interfere; with him this is about Aug. 25. Then the stores are well ripened and capped. If his bees had a fall flow he might feed later. He contracts generally from ten combs to seven; and if any colonies have too much brood to feed properly he takes a portion out and gives it to weaker colonies.

He uses, by measure, two parts of granulated sugar to one part of water, first bringing the water to a boil, then gradually stir-

ring in the sugar, bringing the mixture to a boil.

Members in convention now resolved themselves into a series of hostile camps, being hot and cold "processers," thick and thin syrup-makers, and advocates and non-advocates of tartaric acid. W. A. Chrysler, F. J. Miller, and A. Laing, all good men, advocated the cold process; H. G. Sibbald, J. H. Shaver, D. Anguish, Jas. Armstrong, and L. A. Aspinwall were advocates of the warm process. Mr. Sibbald even declared that he had lost heavily in winter by feeding syrup mixed by the cold process, and twitted some of the opposition upon the losses they had in wintering, which might be obviated by adopting the hot process. Statements in some cases were somewhat modified by saying that, if the syrup were fed early, the cold process might make less difference.

As to the thickness of the syrup, the proportion advocated ran all the way from half and half by measure to three parts of sugar to one of water (Mr. Anguish advocating the latter). The argument in favor of thin syrup was that it was less trouble to make by the cold process, and that the bees would take it up more readily. Those opposed did not see the use of giving the bees so much water; the evaporation of the moisture kept the bees excited; heat had to be generated, which wore out the bees and wasted sugar syrup. Mr. Sibbald stated that, in late feeding, stimulation to brood-rearing should be avoided and the syrup fed rapidly. This causes the bees to store the syrup before the queen gets ready to lay, and the bees quiet down again almost at once.

Mr. Aspinwall thought syrup should have tartaric acid in it. It not only prevents the crystallization, but inverts the cane sugar. This is a process which, owing to rapid storing, is done imperfectly by the bees. Owing to obstacles, he fed his bees in December last, and could have fed them all winter. He uses a top feeder placed directly over the cluster. He then gives the bees a little smoke and raps the hive when the bees arouse sufficiently to find the warm syrup.

Mr. F. A. Gemmill advocated tartaric acid because it never does any harm, and is sometimes beneficial. Mr. Aspinwall stated that there is a gland in the mandibles of the bee, which secretes a fluid, very rank and strong-smelling. This is formic acid, and, under normal honey-gathering, largely inverts the nectar.

Upon the advisability of contracting the brood-chamber for winter there was a fair amount of unanimity. The desirability for bees to cover, as nearly as possible, their stores was admitted by all. It was, however, pointed out that, in case of danger of foul brood, the contraction resulted in a wholesale mixing of the combs, which might result in spreading the disease.

It was advised to feed in the fall as soon as the queen had stopped laying when the brood space in the hive would be contracted so the bees could store the syrup in these emptied cells, and cluster over the stores during win-

ter. Mr. Sibbald made a good point when he said, "Pack bees, that are to be wintered outside, early; fall packing is a greater advantage than spring packing."

In closing this article let me say that, if the stores are not good in the hive during that portion of the spring when the bees are much confined to the hive, it has a very injurious effect. It causes dysentery, weakens the bees, and keeps up spring dwindling. Such stocks had better be given a good rapid feed the first opportunity time.

Brantford, Ont., Can.

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### GHURIB DAS.

BY W. K. MORRISON.

The subject of this sketch is a unique character who deserves more than passing attention. Dressed in the garb of an Indian coolie he looks like a genuine native of India. As a matter of fact, he is a typical son of old Scotland, both in personal appearance



GHURIB DAS, ADJUTANT OF THE SALVATION ARMY IN BRITISH GUIANA.

and behavior, and in no respect need the old land be ashamed of her son, even if he has thrown away his kilts.

Ghurib Das was originally christened by his family minister plain Alexander Alexander. In course of time he obtained a position as overseer on a sugar-plantation in British Guiana. He found it a hard place, not only for a white man, but also for the East Indian black man; and he determined,

after his conversion and reformation, to become a Salvation Army missionary among the natives of India residing in Guiana. He soon found it was difficult to reach them, even when he spoke their language. They criticise missionaries because they have good clothes, eat fine food, and live in nice large houses, so that it is easy to be a Christian. To get nearer their hearts he decided to adopt their garb and imitate them as far as he could. This had the desired effect, and he soon gathered a number up from their degradation, for bad habits, janga, and opium will ruin any man, even if made of "blood and iron."

Besides gathering up Indians he also got together a motley collection of Scotchmen and Englishmen who had been overseers like himself, but who had fallen by the wayside, chiefly because they liked Scotch fire-water better than life itself.

He had made no arrangements for receiving white men, but he did not send them away. On the contrary, he took them home; but even that would not do, so he raised funds and bought a home in the country, where they could sober up and start a new life under new surroundings.

To keep his protégés busy he started various little enterprises, one of which was an apiary of about thirty colonies. He did not know any thing about bee-keeping, but he read up on the subject until he was able to teach the art to others.

It was in this way I came to know Ghurib Das. He wanted to know more about bees, and sent for me to tell him. I found him in his "office," which consisted of a bare table behind a coolie eating house in Georgetown. It seemed to me he was casting up accounts, and it is well known he does not waste a cent. He runs another lunch-room for whites out of work, and also an industrial home and laundry, both for East Indians. He conducts street services, and makes visits to the country around, so that his time is fully taken up for 16 hours a day. How he got time to learn bee-keeping I do not know.

Ghurib Das has the entire confidence of the planters and business men of his country, who contribute readily to his plans as far as their money will do it. Some of them do not believe in ordinary missionaries, but they cordially believe in this one. He was one of the prominent figures in the Salvation Army Congress in London some years ago, and deservedly so, on account of his self-denying character and genius for work.

I have met all sorts of missionaries, lived with them, slept with them, and traveled with them; but Mr. Alexander is the noblest of them all, because he is the humblest.

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WE have just received the annual report on food adulteration, issued by the North Carolina Department of Agriculture. The report on honey is interesting. In 1901 the percentage of adulteration was 20; in 1903, 33.3; and in 1906 none at all.



EDWARD FRITZSCHE'S SHED APIARY, RICHMOND, N. Y.

## SHED APIARIES.

Good Protection in Summer and in Winter.

BY EDWARD FRITZSCHE.

I am sending you two photos, one of which shows my little daughter Edna, only four years old, holding a frame of bees. The other gives a view of a part of my apiary.

I have used the sheds shown in the larger picture for the last three years, and have not found them very inconvenient; but I do not intend to place the hives so close together again, as it tends to encourage mixing and fighting. The sheds afford good protection in the summer from the sun, and they are the only and the best thing for outdoor wintering, as they are a good protection from storms. As soon as snow comes I close the front of the sheds with doors, and always find the colonies in good condition, with plenty of honey in the spring.

About my little helper, Edna, who is only four years old, I would say that, even if she does get a sting or two once in a while, she is not afraid of them; and even when she was holding the frame she got one sting, but still held the frame till the picture was taken. She also comes and calls whenever the bees are swarming, should I not happen to be in the yard.

Richmond, Staten Island, N. Y.

[We are of the opinion that closing the sheds during bad weather in the fall or spring as well as in the winter may be good practice providing that such closing shuts the hives in darkness. The sheds should, of course, be opened in flying weather. Failure to do so promptly would more than nullify all the good that had been done.—ED.]

## MOVING BEES.

Bees Moved more Safely in Winter than in Summer; Some Experience which Shows that December is the Best Month in the Year for Moving.

BY DOUGLAS D. HAMMOND.

During the past 15 years I have been so situated as to move a great many colonies of bees from one to several hundred miles. My first experience was in buying colonies at sales in January and February, and moving them to a cellar. At first I thought this would do them great damage; but to my surprise they invariably came out in good condition. I once moved 98 colonies in a bobsled during January, and I expected to break some combs; but up to date I have never broken a comb, although I have moved bees every month in the winter.

If you start in to close the entrances to quite a number of colonies, by the time the last is closed you will simply be astonished to find how the bees will give off heat. This warms up the combs; and if there is any empty space it is at the bottom of the frame; hence there is no jerk or leverage on the place where the comb is attached to the top-bar. In warm weather, on the other hand, the lower part of the comb is full of brood, and is heavy. Just above the brood the comb is very tender from the time the first pollen comes in in the spring until the first cold nights in the fall. It is just at this point that combs are so often broken when the moving is done in the summer.

Another reason why moving can be so safely done in cold weather is this: Every practical bee-keeper knows that, when the

honey in a hive is all sealed, as is the case in winter, the bees will not load with honey when disturbed. In the winter, from actual experience I find that the bees will rush against the screen at the entrance; and after two or three hours, no matter how much the car or wagon jars them, they will leave the entrance and quietly cluster as though they were undisturbed. After my experience of being in a car three days on one occasion, and two days and two nights on another, and never having a lot of bees do nicer, I honestly think a month would not have done them any harm. All this moving I am referring to was in freezing weather, and I never found more than from a dozen to twenty dead bees when I took off the screen. In winter, the only ventilation necessary is at the screened entrance, which should be  $\frac{3}{4} \times 12$  inches.

I have moved a great many colonies in warm weather in well-screened hives. I have even put empty bodies on top, and covered them with screens, and then found from actual experience that, if water is not given the bees every few hours, they will destroy all unsealed brood the first 24 hours. By the second day all unsealed brood, as a rule, will be gone; even if plenty of water is given, and if the colony was very strong in starting, it would be only a mere nucleus by the time the first honey-flow occurred after the arrival. Under such condition the queen seldom has any ambition. Light colonies stand summer moving much better. They will build up and do finely.

On Nov. 6 I moved 23 light colonies to my new home from Sac Co., Ia., having sold all of my stronger ones, and they have come through in good shape. The distance was a little over 100 miles, and the time in transit was 33 hours. I took them in a car with other stock and household goods.

Now, if I had bees in Iowa, or in any other State, and intended moving at any time up to May, I would move by all means in December, or during a month that would correspond to December in Iowa. When I arrived at the destination I would not be afraid to put the colonies in a cellar. Any



EDNA FRITZSCHE, AGE FOUR YEARS.

bees that I might see would be small and wonderfully active, and at the entrance there would be a fine dry dust which we all accept as good conditions for any colony. My reason for preferring December is that the weather is usually not so severe during that month; otherwise, January or February is just as suitable.

When I moved to Sac City, Ia., five years ago, I moved three two-frame nuclei, five three-frame nuclei, as well as some full colonies, all of which had been in a cellar up to March 1. They were taken out of the cellar, and loaded in the car and shipped about 300 miles without any profit. While on the way the weather was just a little above zero. I never had bees do better.

In a later article I will tell how to load colonies in a car and how to ship bees in less than carload lots. On most of the railroads bees can not be shipped in less than carload lots except by express, unless certain methods are used which must necessarily be in strict accordance with the rules. During the last ten years I have always sent household goods, bees, etc., in emigrant cars.

After reading this, if any one wishes to know how bees behave on the road in winter, let him take a colony in a buggy a few

miles, and then open it and see if any of the bees are full of honey. Any amount of transit does not hurt bees if they do not gorge with honey.

Truro, Ia., Dec. 17.

### BEES CLUSTERING OUT ON FRONTS OF HIVES.

Value of Deep Entrances in Summer.

BY DR. C. C. MILLER.

When bees have little to do in the fields toward the close of the season, especially during a hot spell, they are likely to hang out in great clusters, and many an inexperienced bee-keeper has watched in vain at such times for a swarm to issue. With a bottom-board two inches deep the bees are not so likely to cluster outside, but take it out in hanging down below the bottom-bars as shown in the illustration in the hive at the



DEEP ENTRANCES DISCOURAGE CLUSTERING OUT ON THE FRONT OF THE HIVE.

right. That picture is reproduced from a snap-shot taken Sept. 17, 1906, at 3:40 P.M., the thermometer at 89 degrees in the shade, and the blazing sun shining directly into the entrance.

There is something very attractive about the appearance of such a cluster, and I always have a feeling of regret that it must be interfered with by putting any thing in its way during the busy season to prevent the bees building down. Quite possibly the bees have the same feeling of regret, for they apparently take pleasure in sailing straight into the hive and alighting directly on the cluster, instead of alighting on the floor and then climbing up. It's a pretty sight to see the bees take this short-cut to their home.

Do you see that apple lying in the grass right in front of the hive at the right? That suggests one trouble in having hives under the shade of apple-trees, in spite of the fact

that an apple-tree forms a splendid shelter for man and bee. In a still night in the fall you'll hear "whack, whack," as one after another the apples fall on the tin or zinc roofs. Perhaps, however, the bees get used to it.

Marengo, Ill.

### SPLIT SECTIONS.

Foundation Cut to Fit; Objections to Bottom Starters; a Plea for Full Sheets Fastened to Top and Sides of Sections.

BY ALLEN LATHAM.

This subject is of especial interest to me, as I am about to choose between these two methods of preparing the sections for the honey-flow.

I was at first greatly pleased with the split-section idea, not only because of the apparent saving in labor, but because of the evident gain in perfection of completed section. But

the thought of the edge of foundation showing on the top and sides of the section has kept coming into my mind with such an annoying persistence that I have had to heed it. No, I can not confidently adopt that plan.

And now on page 82 comes Dr. Miller with the modest suggestion that the bottom starter is a better plan than either the split section or the sheet cut to fit. With his suggestion he points out the frailties of the sheet cut to fit. But are these frailties such that they can not be overcome? Surely it seems not difficult to arrange a contrivance with which one can

square his sections at the same time that he puts in the snugly fitting sheet. As to the melted wax at the sides, I would suggest that, with expert work, the amount of wax can be brought down to such an insignificant quantity that the objection is not serious. Moreover, in cutting the comb from the section it is improbable that one person in a hundred cuts close to the wood. The edges of the cell-walls as naturally built by the bees will offer fully as much obstruction to the knife as will the melted-wax line. The only comb easy to cut out is that which has no cells of honey next the wood; and, except for appearances, any user of honey would prefer such a comb to one of those fancy no-peep-hole sections.

Yet it is desirable to get the plump section, for the simple reason that it will sell better—sell better because the buyer thinks he is getting more honey for his money.

Any one of the three methods under discussion will produce the plump section, and any plump section is difficult to cut the comb from.

Permit me now to discuss the "better than either," the bottom starter. Firstly, is the bottom starter necessary? I feel constrained to say that it is not. If one will nip the heads of those queens whose workers fail to build comb quite to the bottom of the section, and breed only from those queens whose workers build the comb down and fasten it firmly to the bottom, he will need to use no bottom starter. I am inclined to the belief that my good friend the doctor has bees which are disinclined to build comb to the bottom. A few years ago I was awarded a premium queen which was reared by Dr. Miller. She was a vigorous queen of good size, and proved prolific. Her workers were energetic, and had honey-gathering qualities which were not to be despised. But such combs as they did build! I never saw bees any worse in this particular. They would build a frame of comb and not fasten it anywhere except to the top-bar, while their sections of honey were solid chunks of honey with daylight showing all around the chunk except at the top. It is needless to say that I quickly got rid of that queen. Now, one queen does not denote the character of the bees in one's entire apiary; and, more than that, we all occasionally find a queen of our own rearing which will show this comb-building trait. Still, Dr. Miller tells us that he has to use bottom starters.

I have produced hundreds of sections without bottom starters, which had the comb almost as solidly built to the bottom as to the top of the section. Occasionally I spot a colony nearly all of whose product consists of sections which will let you slide a match along the bottom-bar without brushing the plump comb above. That colony is marked for requeening.

Secondly, is it desirable to use even bottom starters? My experience with these is much less than that of Dr. Miller's. Only two seasons have I tried bottom starters. I tried them in the hope that I could produce my honey thus without separators. And they did help. I have no question that I get a larger percentage of cratable sections (unseparated) by the use of bottom starters than I do without such starters. I can not here enter into the reason why I prefer to go without separators; but having that preference I wish that plan of using foundation which will bring the best results.

With separators one can use almost any plan of foundation fastening, starter or full sheet. He will get almost as good final results whatever the plan, though even with separators there is a choice as I will point out in a moment.

The bottom starter calls for more putting work. Just so far is it undesirable. It makes each section of honey cost more.

The bottom starter with me spoils many a section. Right here I see the doctor's jaw drop in astonishment. Possibly I do not

know how to use the bottom starter; but I have tried faithfully to follow the very best advice and directions, those of Dr Miller. I cut my foundation carefully, use a bottom starter not over half an inch wide, usually less. The space left between the starters is about  $\frac{3}{16}$  inch, sometimes as small as  $\frac{1}{8}$ , and sometimes as large as  $\frac{1}{4}$ . What results? I have removed a case thus prepared, which, from above, seemed to contain 28 sections, every one nearly perfect. Upon drawing out the sections three-fourths of them show bad joints between the starters. Right at that point the comb at its best will be irregular, with cells of different size and of different shape from the normal. When not at the best there will be frequent unsealed cells, and, not infrequently, empty cells of grotesque shape.

Looking into the why of this I discover that the cause can be one of several. The narrow bottom starter keeps a pretty well-fixed position, but not so the upper sheet. This gets out of true before the joint is made. One cause of the disjuncture is failure to see that the foundation does not strike the side of the section when it is squared up. If, when squared in the super, the side of the section pushes against the sheet of foundation, it will throw the further (lower) corner to one side. Again, bees frequently cluster in the super between the foundation sheets of adjoining sections, and start to draw out that foundation several hours before a cluster of bees get at work upon the other sides of these two sheets. The side first drawn becomes convex and the unstarted side concave. The drawing-out so strengthens the sheet that it never becomes straightened by the drawing-out of the other side. In this way the lower corners, and sometimes the entire lower edge of the sheet of foundation, are thrown out of line with the bottom starter. Again, one lateral edge of the sheet is early fastened to the wood while the other still hangs free; then the earlier or more rapid building of one side throws the lower free corner to one side. Again, I am inclined to the belief that some foundation warps. Such warping will throw the upper sheet out of line with the bottom starter.

Such throwing-out of line is disastrous. The work at the juncture is delayed. The perfect comb above and below is filled and sealed, while still unripe nectar is in the irregular cells between. This delays the removal of the super; and, if the season is cut short, prevents the completion of that super.

If the weather is hot the upper sheet tends to stretch. If it stretches too much it will frequently pass the starter, and the result is again bad. If it has already been fastened to the starter before the full stretching occurs, a bad bend in the comb occurs. The cells on one side will flare out while those on the other side will run to an end before they become full depth. I have seen such cells filled with honey and no true capping on them, the side-walls joining in a point. I have even seen them dry and empty, air-

spaces entirely surrounded with honey, or, rather, cells of honey.

I use the extra-thin foundation. With the thin it is possible that my experience with the bottom starter might be more satisfactory. But I must use the extra-thin, for I will not have gummy septa in my section honey.

Even with separators the sheet of foundation with free lateral edg's often brings poor results. The sheet takes on a twist, and the cells on one side and one edge will be shallow, while backing up to them are cells of double depth. This means slow finishing in that super.

With all these facts in mind I am feeling the need, more and more, of sheets fastened to the sides of the section. I have for over a score of years allowed my foundation to hang free, and have had no experience whatsoever with the firmly fastened sheet. All logic points to success through such fastening, and the coming season will see the plan largely tried in my apiary.

Only one possible fault, aside from the extra work, occurs to me. If the foundation stretches, will there not be irregular cells brought about by the sides? Let a man put his hands into his trowsers-pockets and lift. The appearance which those trowsers will assume suggests the wrinkle-sided result that might follow the use of full sheets of foundation fastened at the sides.

It will be obvious, from what can be read between the lines, that I have no use for a full sheet fastened at the bottom. I would leave a scant quarter of an inch there for the possible sag of hot weather.

Finally, after all is said, the very best section honey of all can be produced with only a wee small starter at the top.

Norwich, Conn., Jan. 20.

#### PAPER WINTER CASES.

Some Interesting Experiments Going to Show that Their Use is, after All, False Economy.

BY J. L. BYER.

Considerable prominence has been given in GLEANINGS in reference to what I said regarding paper winter cases in the November issue of the *American Bee Journal*. As the editors of this journal have given prominence to the paper idea, it is only proper that I give my reasons for reaching such positive conclusions as quoted by Dr. Miller on page 1554 of GLEANINGS, 1907. Bare statements without any thing to substantiate them are of little value, and apt to impress the readers with the idea that prejudice may have some bearing upon the case at issue.

In the spring of 1903, 20 colonies of bees were bought and put in the home apiary of 110 colonies, making a total of 130, which, by natural increase, came up to 160 when the bees were gotten ready for winter. As the yard was very much crowded, the 20 colonies were placed here and there all over the api-

ary, wherever room could be made; so, as a natural sequence, they were *protected* more or less by the position they occupied between large packed hives on each side of them.

The hives were eight-frame, L. length, but exactly one-half deeper than the standard Langstroth—a hive, by the way, with a good many admitted disadvantages, yet with a splendid one for outdoor wintering. All the rest of the colonies were in hives of the same dimensions, only the majority of them were of the ten and twelve frame size. All were permanently packed with paper on the outside of the inner case, and four inches of sawdust between this and outer cases. The outer cases projected six inches higher than inner, making space for a cushion of dry sawdust over the frames.

In the fall, having no suitable cellar, the problem confronted us as to what to do with those twenty single-walled hives. Owing to the crowded condition of the yard, tenement cases were out of the question, and I disliked the idea of making a single case for each individual hive. Just at this time I read about the tarred-paper plan, and at once the problem of wintering those twenty colonies was solved(?). An empty super, the same depth as the hive-body, was placed over each colony, with about ten inches of dry chaff packed snugly on top of the quilt over the frames. The tarred paper was then wrapped neatly around the full size of the hive, super and all, and tacked securely with cleats. As suggested, the paper was allowed to go below the bottom of the hives, a portion of the paper then being cut out for the entrance.

Perhaps the readers will be more assured of a good job having been done when I say that Mrs. Byer helped to do the "papering," as I have often noticed, when any work that requires neatness and precision is to be done, it is much better if there is a "woman in the case."

Now as to results: As will be remembered, the winter of 1903 was a very severe one; in fact, January and February were almost record-breakers. To be brief, the 140 colonies in the packed hives wintered well—so well that we were surprised, as we expected to lose very heavily after the bees passed through such a severe winter. About ten per cent would cover the winter loss in addition to eight or nine colonies that died in the spring from queenlessness and other causes.

As to the twenty colonies in the "papered" hives, by Feb 1 I saw it was all up with them—six or seven being dead at that early date. The frost formed in coats on the inside of the hives; and whenever the weather became a little mild, the moisture would run in streams out of the entrances.

As to the size of the entrances, I forgot to say that some were left 5 inches by  $\frac{1}{2}$ , and the rest much smaller. However, it became imperative to enlarge the small entrances, as this moisture referred to congealed to such an extent as to close completely the entrances

when the weather turned colder. Out of the lot, only three survived, and they were reduced to mere nuclei.

You may say this was an extreme case, and not likely to be repeated for some time. Admitted that such is the case, *yet one experience like this would pay for the extra cost of winter cases for years to come.* I admit that, even in our latitude, *some seasons*, bees will winter fairly well in hives protected by paper if some dry packing is placed on top of the brood-nest; but that is no argument in their favor, as the bees will in the same seasons winter in single-walled hives without the paper. It is a well-known fact that strong colonies will often winter fairly well under abnormal conditions; but rest assured that, under such conditions, an *abnormal* amount of stores is always consumed.

For eight consecutive years one of these big twelve-frame hives referred to, with only the single walls, wintered well with no protection save a super full of chaff on top of the hive. About two inches from the top of the brood-nest a loose knot about an inch in diameter had fallen out, and it was possible at any time during the winter to see the cluster of bees through this knot-hole. No doubt Mr. Holtermann and others will remember this incident, as the hive was shown them during a bee-keepers' meeting at my father's place. With all this exposure they wintered well enough to average over 100 pounds of extracted honey per year for the eight years; but every winter fully a third more honey was consumed than in colonies protected properly. Just so with the papered hives. I feel convinced that, in every case, the saving in packing-material will be more than balanced by increased consumption of stores.

You say, Mr. Editor, p. 1554, that you can see no difference theoretically between paper and other packing-material, and so far as your top protection described on page 93 is concerned I agree with you; but when side and end protection is considered, the paper is no comparison to a few inches of sawdust for resisting frost.

While on the farm we had a large cellar that would hold 4000 bushels of roots, built as an annex to the stock-barn. While the walls of this cellar were mostly underground, over the top was simply a floor of unmatched lumber with roof over all. Now, although the thermometer sometimes drops to 20 below zero, we found that six inches of sawdust over this floor would keep out the frost. Do you think that tarred paper spread over the floor would have given like results?

As the most of my bees are wintered outdoors, I have tried only the paper for spring protection in a limited way; but what experience I have had, coupled with what I have observed in other yards, has disgusted me with its use, as the black paper attracts the heat of the sun *too much*, and bees are enticed out in unsuitable weather. With boards leaned up against the front of hives this difficulty is overcome somewhat; but at out-yards they can not be used. Certainly for

my own use I should much prefer some top protection that will fit *snugly* over the frames to any amount of paper tied around the sides and ends of hives.

This article is already too long, so I must forbear giving the experiences of some other bee-keepers with the paper protection; but before closing I wish to say that, in my opinion, too much stress has been laid by some writers on the danger of *too much* packing for outdoor wintering. Last winter the losses were very heavy in the majority of apiaries, regardless of how bees were packed; but I wish to say that the very strongest half-dozen of colonies to come under my notice last spring, among hundreds of colonies examined, were those wintered by a friend of mine, a farmer bee-keeper. These bees were packed in large cases, four inches of sawdust under the hives, six inches all around, and twelve inches over the brood-nest. The conditions those bees were in on the first of May, after being wintered in those "refrigerators," would have delighted the heart of A. C. Miller in spite of his opinion of such methods.

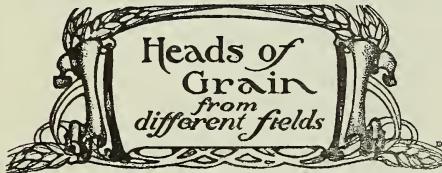
The argument is often advanced, that the packed hives do not warm up enough to let the bees have a flight, as is the case with the paper-protected hives. True; but the bees in well-protected hives do not *need* the flight in the majority of cases. No, I do not advocate as much packing as the amount referred to in my friend's case; but I do think there is danger of giving *too little* rather than too much protection to bees wintering outdoors in Ontario.

Mt. Joy, Ont.

[There is not much if any difference between your position on paper winter cases and that of the editor. Instead of saying that we "can see no difference theoretically between paper and other packing material," as quoted by you, we said (see p. 1554, Dec. 15), "There should be several folds of newspaper or other packing-material under the paper cap to give the hive necessary protection. We can see no reason theoretically why such a packing-material, protected from the weather by an oiled or tarred paper, should not give just as good results as the same packing-material surrounded by a wooden case." Notice that that statement does not compare "paper or other packing-material," but a paper or wooden winter case over the same amount of packing; notice also that we said "packing-material surrounded by a wooden case," meaning not packing-material confined to the top only, as you seem to infer, but at the top and *around* the hive, sides and ends. In other words, if a certain thickness of packing were sufficient under a wooden case, it ought to be nearly if not quite as efficient as under one of paper. Or, to put it still another way, it is not a question of *covering*, but it is a question of the *amount* of packing-material around top and sides, and the quality of it, no matter how covered, if kept dry. But right here is a question: Is it practicable to put as thick a packing under a paper cap as in a double-

walled hive? We think not, for it is very difficult to make packing around the hive, as well as on top, hold its place while the paper cap is being folded around.

We shall have to conclude, for a climate as severe as that of Canada, in view of your experience and that of others whom you do not mention, that a paper cap is not satisfactory; that nothing less than a good double-walled hive with plenty of packing between the walls and a powerful colony is suitable for wintering outdoors. Mr. E. D. Townsend (although not an advocate of paper protection for wintering) has used paper successfully for *spring protection* for a number of years. He has found, however, that the black color of tarred paper is detrimental, and so he advises the use of light-colored paper. An article from him on this subject will appear in our next issue.—ED.]



#### MASSACHUSETTS SOCIETY OF BEE-KEEPERS.

The fourth meeting of the Massachusetts Society of Bee-keepers was held February 1, 1908, in the Ford Building, Boston. The topic for the evening was "Spring Management of Bees," by Mr. Allen Latham, president of the Connecticut society. His long experience had convinced him that, if fall management had been of the proper kind, there would be no need of spring management; and he expressed disapproval of opening up the hives and exposing the bees to cold before May or June. He gave several directions by means of which we could tell by outside observations if the colonies were in good condition or not. Only those that were not in good condition should be manipulated. He was plied with questions, all of which he easily answered. Last he gave a description of his large twenty-frame hives—those that he has at the Cape, which can be examined by him only in June and September, and from which he takes honey in the large frames instead of sections. After a most profitable meeting we adjourned to meet again on the afternoon of the first Saturday in March at 2 o'clock at the Ford Building; and we hope the weather will be pleasant so that all old members can attend. Considering it was such a stormy day and evening it was the best-attended meeting we have had. Nearly 40 were present, and quite a number of bee-keepers joined our society. Others promised to do so at the March meeting. As these meetings are fast drawing to a close we hope to see a good number of the old members who find it inconvenient to attend the evening meetings.

Belmont, Mass.

X. A. REED.

#### STARTING WITH THREE-FRAME NUCLEI; A GOOD RECORD.

I wish to report my experience with bees in this new country, the Shoshone Reservation, which was opened last spring, 1907. On May 20, 1908, I sent for 35 three-frame nuclei with untested queen. The bees were five days on the road, even though they came by express. When they came I put each nucleus in a ten-frame Simplicity hive and put in seven frames with just  $\frac{3}{4}$ -inch starters, expecting the bees to fill the hive or about that. I was not prepared for what followed, for in a short time the hives were full to overflowing. I put on another ten-frame body, and this they filled. I then put on the third ten-frame body, and this they also filled. At this time there was a prospect of three weeks of good honey-flow ahead, and I had no more hives nor sections. Every thing was full; so when fall came I found I had, from these 35 nuclei, 71 stands of bees in ten-frame hives and 600 lbs. of the finest honey I ever ate. I also took 20 colonies on shares and got 800 lbs. of fine comb honey which I sold with the 600 at  $12\frac{1}{2}$  cts. just to my neighbors, and did not solicit for the sale of one pound of it. It was all sold. Three weeks after, the bees stopped working. Orders kept coming in as far as 60 miles, long after I had sold out.

Hudson, Wyo.

GEO. BURCH.

#### BEE-SHEDS FOR WINTER; THEIR ADVANTAGE IN PREVENTING THE FLIGHT OF BEES ON UNFAVORABLE DAYS.

I can agree with the editor, p. 96, Jan. 1st issue, in thinking that a great many bees are enticed out when it is too cold for them to fly, and therefore perish. I always let down the doors to the bee-sheds in cold weather, shutting out the light as well as the weather. I let the light in only when the bees should fly.

I must, however, differ from friend Latham that it is necessary to have the entrance directly in front of the cluster. For many years I have left a  $\frac{3}{4} \times 2$ -inch entrance at each side of the front of the hive. If the cluster is on the east side of the hive the east entrance is found many times completely stopped up with dead bees and ice, while the west entrance is clear. I would not think for one minute of having the entrance in the middle, and depending on that for air, and I have wintered from 30 to 50 colonies for 20 years and never lost one in the winter.

I should think Halter's storm-door very nice for outdoor colonies. Still, bee-sheds are far ahead, I think, if rightly managed. There can be no spring dwindling in them if bees are not enticed out as the editor says I have never had any spring dwindling of colonies in sheds, but have had colonies badly affected when wintered outside.

Marceline, Mo.

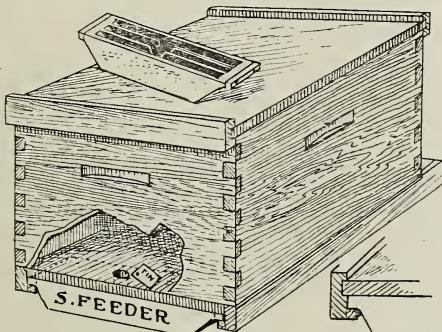
IRVING LONG.

[Your scheme of having a door or lid to your shed that can be let down in unfavorable or bad weather, shutting in the bees and closing out daylight from the entrances, is a good one. Your report on how it keeps

down spring dwindling is interesting as well as valuable. By the way, the time is coming when we shall give more attention to this matter of spring dwindling and losses from flight on bad days in the fall. To winter bees successfully is one thing; to "spring" them is quite another.—ED.]

#### HOW TO USE THE SIMPLICITY AS A BOTTOM FEEDER.

Here is a new arrangement for bottom feeding with the Simplicity feeder. Cut out each end so that it will be about  $\frac{1}{4}$  inch thick; then nail a strip on the side rails of the bottom-board, for a rest, and to permit the feeder to slide in and out. Cut a proportioned hole in the bottom over the feeder, and slip a piece of tin over this when not in use.



Attaching Simplicity feeder under the bottom-board at the back of the hive.

This feeder will be easy to slide in and out; does not mar the beauty of the hive, nor require any side room. If they were made full width of the inside rails of the bottom, in length, the bottom rails could be grooved to receive them, or the little strips could be quickly put on. I dislike to mar the looks of a hive by shoving the bottom out in front, and believe this arrangement is equally satisfactory, although cheaper.

Bladen, Ohio.

C. H. CARGO.

[This method of applying something already in use we consider to be excellent. If one does not have Simplicity feeders he may use a pan with a float. The rim of the pan could be made to slide into rabbeted cleats the same as here shown.—ED.]

#### PLURAL QUEENS; A FLIGHT-HOLE FOR EACH QUEEN.

On p. 1579 Mr. Alexander wishes to know why I leave only one super open about the time the young queens are old enough to take their flight. By going back to page 476, for 1905 GLEANINGS it will be seen that I was superseding my queens in the spring. It was just at this time that I hit upon the dual-queen system by having the young queens mated from the super.

I experimented with flight-holes in different parts of the super, but I found that on several occasions it did not prevent the young

queens from going in at the main entrance of the hive; so now I always protect the entrance or flight-hole with a piece of excluder zinc.

As to that expression of being able to keep as many queens as there are supers, I will state that the limit was three queens to as many shallow supers. You must take into consideration that I am in a semi-tropical climate. The queens are introduced in the fall; and, when found to be accepted, the hive is not interfered with before the first week in February, when the top super with most of the honey is placed below.

The sting-cut virgin queen (p 1579) turned out to be a drone-layer, and my second attempt to get several sting-cut virgin queens mated from one hive was a failure.

Sierra Madre, Cal.

H. DAVENES.

#### CAN FOUNDATION TRANSMIT FOUL BROOD?

There seem to be quite a number of colonies affected with foul brood all through the section between Worcester and Springfield, and possibly in other sections; and all the people here carry the impression the bees in old box hives are free from disease, while those that are in modern hives on frames of foundation are all infected, and that the infection was from the foundation used.

Mass.

SUBSCRIBER.

[We desire to say most emphatically that foul brood is not carried in foundation. Wax from foul-broody yards has been melted up hundreds (and we may say thousands) of times, and made over into foundation without any trouble afterward from disease. There is probably not one pound of foul-broody wax to the hundred that ever gets into the market. Once melting would be sufficient to kill all germs of disease; but after it goes to the foundation-maker it goes through several separate and distinct processes of meltings and refinings covering a period of probably three or four hours all told, during which all germs of disease of any sort would be cooked and killed. It is a principle in bacteriology that boiling for half an hour, then letting it stand for a day or two, and then boiling again, and then boiling once more after another period of rest, will be much more effective than one continuous boiling for the same period. After the wax is melted and cooled, the coverings of the germs open, so to speak, and during this time the germs are very susceptible to the action of heat; and when it is applied again they are immediately killed. Ask any scientific man or any bacteriologist and he will tell you that foundation made by any of the standard factories would be perfectly immune to any disease.

The fact that colonies in box hives in the case cited are free from disease can be explained on the ground that in such hives it is not possible to move combs from one hive to another, as it is in the case of the modern hive with movable frames. If disease of any kind is present in the vicinity it may be transmitted from one hive to another by moving

the combs from one hive to the other for the purpose of equalizing the strength of the colony, supplying stores, or the giving of brood for queen-rearing. On the other hand, it is generally considered that bees in box hives, when they once get the disease, are a much more fruitful source of infection than those in modern hives. In some States the foul-brood laws make it a misdemeanor to allow any bees to exist in box hives, and the inspectors are therefore given authority to order all owners of such hives to transfer the bees out of them into modern hives where he can easily look the combs over and see whether the disease may or may not be present.—ED.]



And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.—GEN. 2:7.

I have just made another great discovery. To be honest, however, it isn't exactly a "discovery," because it isn't new; and it isn't my discovery exactly, either; notwithstanding, it is going to be of wonderful benefit to all mankind. It is about chickens and folks and fresh air—not only *fresh pure* air, but *cool* fresh air, or cold fresh air, perhaps

While we grant that "folks and chickens" often suffer from exposure to cold, or from "getting chilled," as we term it, my discovery is that the right and proper way to warm up a *chilled* animal is not to take him (or it) into a warmed-up apartment, where he must from the very nature of things breathe the same air over and over again. When winter comes we all get to work to shut out the cold by closing all doors and windows, and even making all the cracks and crevices as nearly air-tight as we can. The high priced and fashionable hotels up north have storm-doors and double-sash windows, so as to save the fuel-bill; and if anybody objects to the ventilation he is pronounced a crank.

The old-fashioned fireplaces, and lately even the stoves, are crowded out to give place to radiators warmed by steam or hot water, or hot-air furnaces. No wonder the doctors are "kept busy." Some of them are kept *pretty* busy in hunting up names for the new maladies, like grip, appendicitis, etc.

Well, for some time I have been wondering why God has recently put it into my heart to have such a wonderful love for studying all about chickens, especially "baby" chickens. My sister, Mrs. Gray, who has from the first been a leader in the W. C. T. U. movement, said last winter she almost lost patience with me because I used my privilege of talking to great masses of people all over the world in talking so much

about *chickens*—common every-day *chickens* that everybody knows all about, or very much about. When I got to the chapter about "Fighting Mothers," however, she owned up I had made a big moral.\*

Well, as soon as I reached this land of perpetual summer once more, the fever for chickens came back, and I have made two hatches with my two small incubators. I have told you about the first and the 70 chickens I gave to my one hen, the original "fighting mother." This hen had commenced to sit in a barrel laid on its side, and this barrel enabled the 70 to mass themselves around her and over her back in a way to economize heat to very good advantage. When night came, Mrs. Root and I were out in front of the barrel with a good light to see how she was going to manage with her remarkable brood, and this is what we saw. Dainty little heads with the cutest bright eyes were sticking out between her feathers all over her body, as it seemed. First they wanted animal heat for their little bodies, and next they wanted good pure *cool* air for their little lungs. A little later (when a day or two older) they spread themselves out in front of and all around her in a way that was a sight to see; and when a cold night came I discovered that they slowly changed places, very much the same way that a cluster of bees does in winter time. The fresh air they must have, as well as warmth. As skunks and other prowlers were about, a wide board was set up in front of the barrel nights; but I soon found this was too close, so I replaced the board with poultry netting, and this did for a while; but in a few days more the 70 were clear up against the netting, and the hot and bad-smelling air admonished me the barrel must be changed for more airy quarters. A little house 4×4 feet with inch-mesh netting on two sides now keeps out the "varmints" and gives the chicks air when they are nearly five weeks old; but the most of them prefer little perchers a few inches above the ground. They were weaned when a little over three weeks old, and their fighting mother very soon commenced to lay again.

These 70 chicks and the mother hen have explained to me, as clearly as words can tell, that, while these little bodies must be kept warm, the little heads need to be kept out in the cool air. Of course, chickens will live (some of them) if kept in a warm room where they must breathe warm air, and breathe the same air over and over again, and in the same way people *may* live to a good old age (some of them) where they sleep in rooms with the doors and windows shut, breathing the same air over and over again; but nature

\* A few days ago it was my privilege to listen to an open-air talk here in Bradenton by Mrs. Carrie Nation, and she had quite a chapter in her address on "Fighting Mothers." Although she had never heard of me or my chicken stories, you would almost think that she had borrowed from me or I from her talk. Well, well! This only illustrates once more how "great minds (ahem) run in parallel channels." Perhaps I should add that, even if she did make lots of people mad, especially the cigaret and tobacco users, the great crowd gave her quite a generous collection.

is, and has been for some time back, making vehement protests. But we are not done with the chickens yet.

Perhaps I told you I gave the 70 to that one hen because a brooder that was on the way had not yet got around. Mr Calvert informed me some time in December that a man named Root, of Cleveland, O., had a new invention in the way of brooders, and that we (The A. I. Root Co.) were going to make some for him. This man (no relation to us), when he knew I was studying chickens, expressed a wish to have me try his brooder here in Florida. I consented, for, in fact, I had his circular over a year ago, and had listened to his reasoning; but I want you all to know that I have paid for my brooder, for the very reason that I want to give an unbiased opinion.

Well, this man Root talks this way: He says a hen's body, after her eggs are hatched, is up to a fever heat of about 107, and that the chicks, after they are out of the eggs (that she has kept close to 103) are warmed by coming in close contact with her legs, wings, and body, where she has pulled the feathers off in order to permit this *close contact*. If you watch you can see the new chicks push and crowd up between her legs, wings, and body, to get this warmth; and then they push out their heads and drink in the cool fresh air, which is really the "breath of life" and the breath that gives life to all animated creation. This air must be pure, and it has been abundantly proven that a sitting hen must not be kept in a warm room, neither before nor after the hatch. It isn't the heat that debilitates and kills (for my "fighting mother" hatched 20 chickens and raised them all during one of the hot months here in Florida), providing she is right out in the free air all the time. I am just learning that incubator cellars must be well ventilated, for chickens must have pure air to breathe while inside the shell as well as outside.

Now, this man Root has made a brooder of tubes filled with hot water; and the chicks, when cold, push between and below these tubes and get warm while their heads are out in cool pure air. There is no cloth nor curtains about the machine, and there are so many large ventilators I was at first afraid to keep them open according to directions. My 80 chicks, put into it about ten days ago, are to me wonders of health and vigor. I have just now stopped my writing because of a sudden dash of rain; but, although some of them got pretty wet before they ran into the brooder, the hot pipes soon fixed them all right. No thermometer is sent with the brooder. The directions say none is needed. Just turn up the lamp so the chicks are quiet and satisfied, and that is all. If you get them too warm they just squat down under the pipes without touching them, or move out into the cooler apartment. Several times I have had the pipes so hot I could not bear my hand on them; but the chicks were never harmed at all (they just moved back as you would from a hot stove).

When chickens and folks are suffering from cold there are three ways of getting warm; viz., more clothing (or blankets); exercise and artificial heat. The latter may do very well if taken from a fireplace or grate; but if we depend upon warming up a room by warming the *entire volume of air* in the room it needs a good constitution to stand it very long. If the room is quite large according to the number of people it may do very well; and a small room full of people may be well ventilated; but I fear it is not often done.

The poultry books and journals have much to say of the losses of chickens when two to three weeks old from something they call "bowel trouble." I have never had any experience with trouble of this kind with chickens; but, oh dear me! I have had some personal experience along this line, and I will be frank enough to tell you that nothing upsets my digestion like being obliged to remain in a crowded audience where a hundred people, more or less, are breathing every inch of air over and over again. Sometimes even churches are poorly ventilated; but this never need happen here in Florida, and never should happen anywhere. For God's sake (and for the sake of saving souls) do not give the enemy any reasonable chance to discourage church-going by complaining that the ventilation is bad.

Mr. Root, with his brooder, has planned so as to keep the chickens warm while their heads are practically outdoors; and this new book on tuberculosis gives pictures of bed-rooms for consumptives, so arranged that, while the patient is sleeping in a comparatively warm room, his head, or perhaps I should say his mouth, is practically out of doors. There are other pictures of sanitariums where sick people are so well bundled up that they almost live outdoors even in freezing weather.

Now, then, when you are chilly, and feel you may "catch cold" if not warmed up quickly, try first, if possible, exercise.\* Start out pretty well clothed, and then lay off the extra clothing when you find you can spare it. If both clothing and exercise are out of the question, use artificial heat, but don't breathe the hot air if you can help it, and don't breathe the same air over and over. A relative near death was recently made very much more comfortable by being placed near an open fire, with an arrangement to give him cool air right from outdoors to breathe.

Chickens by preference roost in the tree-tops. It would be hard to imagine a situation where they could be more sure to avoid breathing the same air again; and I have heard of lodging consumptive patients in tree-tops in order that they might have the very best air. An upper room, I believe, has been pronounced preferable; but an upper

\*My chicks when ten days old run out in the rain with impunity, but they run like deers, using both wings as well as legs and then dry off between the hot pipes with cool pure air all around them. These same chicks ran all over a large dooryard when less than a week old.

veranda or porch, with rubber curtains to keep off storms, is still better.

When your feet are too cold to go to sleep at once, don't go to bed in a warm room on that account, but warm them up with a soap-stone, rubber bag of hot water, or the time-honored flatiron wrapped in a woolen cloth. The cool pure air will soon give you animal heat enough, and then be sure to get the hot things out of the way or they will make your feet sore and tender.

In regard to brooders here in South Florida, I suppose I should say this is my first experience with brooders of any kind except some very rude home-made ones; and, for aught I know, there may be others having the good features of this one. With favorable weather no brooder of any sort is very much needed after the chicks are a week or ten days old.

The entire poultry business has recently been almost revolutionized by the discovery that cloth curtains are ever so much better than tight glass windows, no matter how cold the weather is; and, just of late, stables for horses and cattle are found to be very much better than tight structures with glass windows. If you are ready and willing to take "the breath of life" as a free gift from God's own hand, look out that you do not, sleeping or waking, stay very long where you are obliged to breathe the same air over and over again.

In answer to many kind inquiries in regard to the sister threatened with the "great white plague," I am glad to tell you that our efforts, through a kind Providence, seem to have, at least for a time, warded off the destroyer. Here is what she has just written me:

Dear Brother:—We are now in the worst storm we have had this winter. This is the first day I have been unable to go over to see the folks across the way. I ventured over yesterday, but tumbled into a snowbank before I got home. I am feeling quite well, and very happy to think I perhaps can stay right here all winter.

SARAH.

Manistee, Mich., Feb. 1.

#### CRIMSON CLOVER IN TENNESSEE.

We clip the following from the *Ohio Farmer* for Feb. 1:

We have experimented considerably in the last two years with crimson clover, and find from our experiments that this forage-plant bids fair to prove most valuable to us. Its hardiness and ability to attain a good growth during the winter and early spring make it very valuable to us as a green-manuring crop, as well as a winter and spring pasture. One point in its favor is the cheapness of seed. We bought seed only for an experimental test. We now clip the heads and save our own seed at very little expense. We sow it and winter oats together for a winter pasture, and find that it has no superior for this purpose. Ten to twelve pounds of clover and three pecks of oats gives us the best results. It should be sown as early as possible when sown for pasture, so that it will attain a good growth before severe weather. We have sown the above on land near our chicken-yard and got paying returns by so doing. The chickens are very fond of it, also of the growing oats. By mixing them we are able to secure an abundance of green feed for the flock the entire winter.

We have experimented largely with it in connection with second-crop potatoes, and find that we can rely on it here. By sowing it alone at the rate of 15 to 18 lbs. per acre, or with rye, 10 to 12 lbs. to three pecks

of rye, we are always able to secure an ideal stand of each, which makes a very fine growth. This forms an excellent winter covering for what would have been naked soil. It also holds the surface soil, thus preventing surface washing. In the spring we also have a splendid crop of green manure to turn under.

We also find it very valuable as a winter crop for young orchards. By sowing it with rye we are sure of one winter crop for our orchards, and are almost sure to secure the two on the same soil at the same time. We have experimented with it in cotton land, sowing it at the last plowing of cotton. Where the land has been well cultivated we usually get a good stand from this sowing. Some of our largest cotton-growers in this section claim that it has no equal for the purpose. One of the most progressive farmers in our county claims that he can grow cotton several years in succession on the same land, and sow crimson clover at the last plowing and leave his soil more fertile each year.

We have tried it with cow peas after wheat and oat harvest, and find the result gratifying. For this purpose 15 lbs. of crimson-clover seed and one bushel of peas gives us splendid results. We cut the peavines for hay when necessary, and still have a fine winter covering for our soil. We find the clover makes a better growth when sown alone. In sowing it with peas we find it best to sow only one bushel of peas per acre. We sowed it and peas together for an experimental test in some corn land, and found the result so pleasing that we shall sow it extensively in our corn land in the future. By sowing it and cow peas together at the last working of the corn, we find we are not only able to grow a grain crop but also two forage crops on our soil at the same time. From the peavines we have often gathered peas that were worth more than the corn crop, also leaving a large amount of nitrogen and humus for the soil in the decaying vines. By mixing crimson clover seed at the rate of 12 to 15 lbs. per acre, and one bushel of peas, we have found that we can secure a vigorous growth that prevents surface washing, also furnishing an abundance of green manure to be turned under in the spring.

From close observation and experience I offer the following to those who are contemplating growing crimson clover: Do not expect to secure a stand unless sown in well-prepared soil. You can not grow it successfully on land that has a sandy subsoil—or at least we can not. We get better results when sown with oats, rye, or cow peas than when sown alone.—W. C. Crook, Henderson Co., Tenn.

While the above is all right for Tennessee, some of it needs some modification for Ohio. We have never failed in getting it to winter over here and in Northern Michigan when sown in July or August. With good ground and favorable weather we have also had good success when sown in September. It must get root enough to stand the freezing and thawing in clay soils. So far as I know, it also succeeds when sown with buckwheat. After the buckwheat is harvested, or killed by frost, the clover comes on beautifully.

#### Temperance.

We copy the following from the outside cover of the *American Issue* for Feb. 8, and hope it will bring a hearty amen from every reader of GLEANINGS:

A religion that leaves the saloon undisturbed, unattacked, is not worthy to be called after the name of Jesus Christ. Again have we reached a time in the march of Christ down the centuries when, if these should hold their peace, the very stones will immediately cry out. This ethical wave against the saloon has come like a hurricane upon the deck of a pirate ship. There is but one explanation—Jesus Christ is walking across the American continent. Every place where his holy foot is lifted leaves a dry spot; and its meaning is, the liquor-traffic must and shall be destroyed. Christ is the source. The saloon must die.—Clinton N. Howard, before Rochester, N. Y., ministers' meeting, January, 1908.

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—also shows how I make any Vehicle you want to your order.—Also full line of High-Grade Harness all at great saving prices. Address me personally—

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30 Day  
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# NEW STEEL ROOFING

**\$1.50 PER  
100 SQ. FEET**

STEEL SIDING  
\$2.00  
PER 100 SQ. FT.  
LOOKS LIKE BRICK

**Most Durable and Economical Known** Easy to put on, requires no tools but a hatchet or a hammer. With ordinary care will outlast any other kind. Thousands of satisfied customers everywhere have proven its virtues. Suitable for covering any building. Also best for ceiling and siding. **FIRE-PROOF AND LIGHTNING-PROOF.** Cheaper and more lasting than shingles. Will not taint rain water. Makes your building cooler in summer and warmer in winter. Absolutely perfect. Brand new. **\$1.50** is our price for our No. 15 grade of Flat Semi-hardened Steel Roofing and siding, each sheet 24 in. wide and 24 in. long. Our price on the Corrugated, like illustration, sheets 22 in. wide and 24 in. long, **\$1.75.** For 25c per square additional we will furnish sheets 6 and 8 feet long. Steel Pressed Brick Siding, **PER SQUARE, \$2.00.** Fine Steel Pressed Gutter, **PER SQUARE, \$2.00.** Also furnish Standing Seam and Crimped Roofing. Add 10c to these prices for shipping. Add 10c to all above prices for shipping to Colorado, New Mexico, Tex., Okla., and Tex. Quotations to other points on application. **SATISFACTION GUARANTEED OR MONEY REFUNDED.** We ship this roofing to any one answering this Ad. C. O. D., with privilege of examination if you send us 25 per cent of the amount of your order in cash; balance to be paid after material reaches your station. If not found as represented, we will cheerfully refund your deposit. **ASK FOR CATALOG NO. C. K. 688.** Lowest prices on Roofing, Eave Troughs, Wire, Pipe, Fencing, Plumbing, Doors, Household Goods and everything needed on the farm or in the home.

**WE PAY THE FREIGHT** points on application.

**WE BUY OUR GOODS AT SHERIFFS' AND RECEIVERS' SALES**

**Chicago House Wrecking Co., 35th and Iron Sts., Chicago**



## "A Kalamazoo Direct to You"

We have more than 100,000 satisfied customers in more than 17,000 cities, villages and towns in the United States who have each saved from \$5 to \$40 by buying a Kalamazoo stove or range on

### 360 DAYS APPROVAL

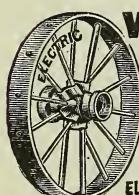
direct from our factory at actual factory prices. No stove or range has a higher reputation or gives better satisfaction. You run no risk. You save all dealers' profits. We pay the freight.

#### Send Postal for Catalog No. 416

and see list of towns where we have satisfied customers.

**Kalamazoo Stove Company, Mfrs., Kalamazoo, Mich.**

Our patent oven thermometer makes baking and roasting easy.



## WAGON SENSE

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

### Electric Handy Wagon.

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

ELECTRIC WHEEL CO., Box 95, Quincy, Ill.

## SAVE MONEY

on **Berry Boxes**  
and **Baskets**

Fruit and Vegetable  
Packages and Grow.  
Supply of all  
kinds. Write for free price list and  
slogan pricelist L. New Albany Box  
& Basket Co., New Albany, Ind.  
Largest Factory of Its Kind  
in the Country.

**THIS  
BOOK  
SENT  
TO  
YOU**

*Lessons in Correspondence*

*AMERICAN COLLEGE  
DRESSMAKING  
KANSAS CITY*

**FREE**

**WRITE  
FOR IT  
TO DAY**

**LEARN DRESSMAKING  
AT HOME  
BY MAIL**

We Guarantee to teach you to your own satisfaction. **SAVE MONEY** by doing your own sewing, by drafting your own patterns. These Lessons will enable you to dress far better at one-half the usual cost.

**WHAT ARE THEY WORTH?**

OUR STUDENTS SAY. (From recent letters.)

"I would not exchange the knowledge I have gained for double its cost." "I would not sell my lessons for \$25." "I would not take \$50 for what I have learned." "I have made 25 waists (six silk ones)—all perfect fits." "I just saved the price of my course by making my own silk dress." "I have saved a large dressmaker's bill by doing my own sewing." "I do all our home sewing now, the children's and all." "I have saved enough from what I used to pay for patterns to buy me a new suit." "The knowledge gained from these lessons is enabling me to help my husband pay for our new home."

**A WOMAN Can Earn \$5,000 a Year**

Many Women nowadays are earning \$100 a week—\$2500 a year by dressmaking. One woman, the head designer of Chicago's largest retail dry goods house, earns \$10,000 a year. Salaries of \$25 to \$50 a week are common. We teach you by mail and put you in a position to command the largest salary of any woman in your locality, or you can start in business for yourself. We teach you how to Design, Draft, Cut, Fit, Make, Drape and Trim any garment, including children's clothing.

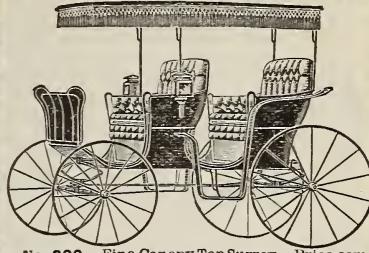
This College is endorsed by all high grade Fashion Magazines—Defileator, Designer, McCall's, Pictorial Review, New Idea Women's Magazine, Modern Priscilla, House-keeper, etc.

This book will be sent to you free. At an expense of hundreds of dollars this college has published 10,000 of these copyrighted books to advertise the American System of Dressmaking, and will send you one FREE while they last. Write for it today. One copy only to each woman.

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367 College Bldg., Kansas City, Mo.**

**PATENTS** No attorney's fee until patent is allowed. Write for "Inventor's Guide."

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**No. 233. Fine Canopy Top Surrey. Price complete, \$88. As good as sells for \$50 more.**

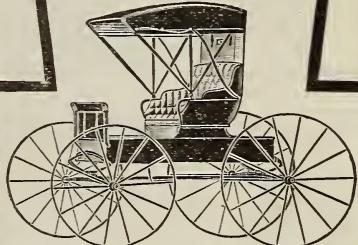
**Elkhart Buggies  
and Harness**

are sold direct from our factory to the user. In buying from us you save the dealer's expenses and profits. 35 Years Selling Direct is our record and we are today

**The Largest Manufacturers in the World**

selling to the consumer exclusively. We ship for examination and approval, guaranteeing safe delivery. No cost to you if not satisfied as to style, quality and price. Over 200 styles of Vehicles and 65 styles of Harness. Send for new, free catalog.

**Elkhart Carriage & Harness Mfg. Co.  
Elkhart, Ind.**



**No. 685. Two-in-one Buggy with padded wing dash and fine alto seat. Top easily removed for open wagon. Price complete, \$53.50. As good as sells for \$25 more.**

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**Direct To You** from our own factory at lowest factory prices. We are manufacturers and handle no 2nd hand nor short length stuff. Every part of our roofing and siding is made in our factory from genuine Charcoal Iron, Double Refined Puddled Iron or Steel. Put on the kind of roof that wears. Ours is guaranteed. It is the best you can buy anywhere. don't pay for it. Easy to fit. No experience needed. Tell us about your building and let us quote you factory prices. Write for Metal Goods Catalog. It is free.

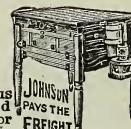
**THE UNITED FACTORIES CO.**  
Dept. No. R38, Cleveland, Ohio.

# Johnson says:

INCUBATOR MAN

He'll not only save you money, but he'll help you make money with a famous  
**OLD TRUSTY INCUBATOR** The simplest and  
surest incubator  
made. Runs itself and pays for itself. 75% and better hatches guaranteed. No  
matter where you live he can make quick delivery. **40, 60, 90 Days' Trial Freight**  
prepaid. Send your name for Johnson's Old Trusty Book. 176 pages—300 pictures and  
good, helpful chicken sense. Write today to

M. M. JOHNSON, CLAY CENTER, NEBRASKA



## BIGGER POULTRY PROFITS

Our new 128-page Poultry Book teaches the inexperienced and gives the expert many valuable hints. Tells why

**"SUCCESSFUL" INCUBATORS AND BROODERS** are best. Offers 14 varieties of fine birds and eggs at low prices. Catalogue free. Booklet on "Proper Care of Chicks, Ducks, Geese and Turkeys," 10 cents. Poultry paper 1 year 10 cents.



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Two things much desired by every farmer. Two things you're sure to get in Iron Age Implements. For over 70 years they have been recognized the leaders in the field of better work, less labor, do more of it, and thus more hired help. Exceptionally well made—durable. Our No. 6 Combined Double and Sis-

SAVE  
HIRED  
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the Wheel  
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Drill Seeder,  
shown here,  
is the most  
complete  
tool made. 1908  
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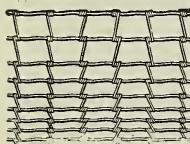


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2¢  
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MAKES and burns its own gas. Produces 100 candle power light—brighter than electricity or acetylene—cheaper than kerosene. No dirt. No grease. No odor. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog. Do not delay.

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48-in. stock fence  
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Best high carbon coiled steel  
spring wire. Catalogue of  
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FREE. Buy direct at whole-  
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how easy it is for you  
to build your own In-  
cubators and Brooders with  
my Free Plans. I furnish  
all parts you can't make.  
This is done, it is not  
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**IDEAL** Hot-Air and Hot-Water  
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hatch more chicks and stronger chicks. Send for my big free handsomely illustrated book, "Poultry for Profit."

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with the fast-digging Iwan Post Auger and get it done in a jiffy. The Iwan Auger bores right into dry dirt, hard clay or gumbo. Digs twice as fast as any other auger and saves its cost in two days. Easy to unload. Makes hard work easy. The

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Free Book for You

**IWAN** is scientifically made from hardest tempered steel. Has sharp, interlocking double blades that stay sharp. Lasts a lifetime. Guaranteed to work faster and easier than any other Iwan product. Refundable. Send us your name right now—today—for our new FREE Booklet—"Easy Diggings." Tells how thousands of people dig post holes and wells with the low-priced Iwan Auger. Address

IWAN BROS., Dept. R, Streator, Ill.

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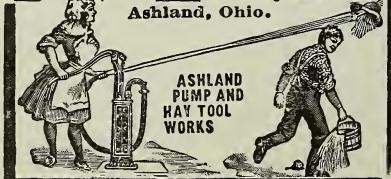
"TAKE OFF YOUR HAT TO THE MYERS"

**25 YEARS**

The Pump that pumps  
easy and throws a full  
flow. The cheapest  
pump is the best  
pump, that's a Myers.  
Pumps, Hay Tools  
& Barn Door Hangers.  
Send for catalog  
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Ashland, Ohio.



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and disinfecting with the new

**"Kant-Klog" Sprayer**

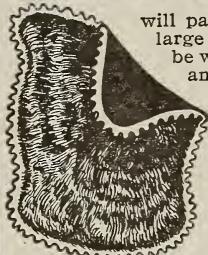
gives twice the results with same  
labor and fluid. Also for spraying  
trees, vines, vegetables, etc.

Booklet free. Address

Rochester Spray Pump Co.,  
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# HIDES ARE TOO VALUABLE TO SELL



Your horse and cow hides will be worth more to you made up into Fur Robes, Coats, Mittens, etc., than the little money the butcher will pay you for them. A coat like we will make for you from one large hide or two small ones, for from \$9.50 up, will last for years; be water, moth and wind proof, and will keep you snug, warm and dry in the coldest, wettest weather. Robe lined with best plush from \$7.00 up.

**No matter where you live WE WILL PAY THE FREIGHT on all hides sent to us to be made into Coats and Robes.**

Any color looks well. Our process of tanning makes the skins soft and pliable, and the finished coat or robe will be so handsome it will be a surprise to you if you never saw one of our cow or horse hide garments before. We guarantee workmanship and complete satisfaction—are the largest firm in the country tanning, manufacturing and selling direct to consumer. Don't sell a hide, but write to us for our 40-page catalog giving full particulars and showing the various styles of fur goods we make. It's FREE—write for it today.

NATIONAL FUR and TANNING CO.,  
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## The BURPEE IDEA

is "to try all things, hold fast to those that are good,—and then make them better!" If you would have pleasure or profit from your

### the BEST SEEDS that Can be Grown!

Shall we mail you a copy of "The Leading American Seed Catalog"? It is an elegant book of 172 pages and is mailed only to those who can appreciate the **BURPEE QUALITY IN SEEDS**. Most important Novelties for 1908—sixteen of which are shown painted from nature. Write **TO-DAY!**

W. ATLEE BURPEE & CO., Seed Growers, PHILADELPHIA, PA.

**SIX HARDY BLIZZARD BELT FREE EVERGREENS**

**6 TREES**

To prove that our EVERGREENS are HEALTHY, HARDY and Vigorous, we offer to send SIX fine two-year-old trees, entirely FREE OF CHARGE, to every property owner who will answer this advertisement. Mailing expense 5cts., which send or not, as you please. A postal will bring them and our catalogue which contains many COLORED PLATES of our BLIZZARD BELT FRUITS; SPECIAL BARGAINS and a mine of valuable information for fruit growers. We want to become acquainted with you, and it will pay you to get into touch with our HARDY "BLIZZARD BELT" stock and our liberal manner of doing business. THIRTY-EIGHT years' experience in growing HARDY "BLIZZARD BELT" trees. Write to-day.

THE GARDNER NURSERY COMPANY,  
26 Nursery Ave. Osage, Iowa.

## Do You Love Flowers?



IF SO I want to send you my FLORAL GUIDE, brim full of good things, also a Gift Package of my best seeds—ASTER, PETUNIA, PANSY PINK AND VERBENA—enough for five fine, big beds. Write me a letter at once (not a postal) and the GUIDE and Gift are yours for the asking.

GEO. W. PARK, B4, LaPark, Pa.

**SPECIAL.**—Park's Big Surprise Package of Mixed Seeds (1000 sqrs old and new) also a year's trial of PARK'S FLORAL MAGAZINE, a charming, illustrated floral monthly, bright as a Marigold—all extra for 10cts. Enclose it in your letter, and they will go with the Gift Package. No dime would yield you more pleasure. If not satisfied I'll gladly return it. 3 lets 25c. Club with friends.



### No risk in buying roses

under our guarantee-to-bloom-plan. Money back for those that fail. Your simple word is all the proof we require.

How can we give such an extraordinary iron-clad guarantee? It's all explained in our 136-page color plate "Floral Guide." Write for it to-day—free.

#### 5 Quick Blooming Roses, 50c

All guaranteed to bloom this year—or your money back. All thrifty growers and profuse bloomers.

Champion of the World (rosy pink); Clotilde Soupert (creamy white with rose centre); Alliance (bright golden yellow; shell pink centre); Cornelia Cook (white tinged with rose); Princess Hohenzollern (deep satiny red).

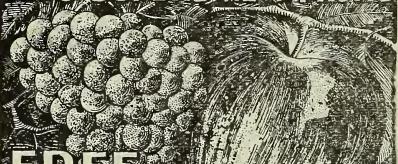
Every rose labelled and every rose guaranteed to bloom this season. Order now and we will ship prepaid at proper planting time. *This advertisement will not appear again.*

Don't forget to write for "Floral Guide." Contains descriptions and helpful cultural directions not only of roses, but hundreds of other choice flowers and plants. It is free.

*The Conard & Jones Co.,  
Growers of the Best Roses in America*

Box 29 B, West Grove, Pa.

### TWO SUPERB NEW FRUITS



**FREE**

WITH

THE FRUIT GROWER, ST. JOSEPH, MO.

Send for a FREE Three Months Trial to America's leading fruit paper. The Fruit-Grower, and we will mail booklet telling how to get a tree of Delicious Apple and a vine of Banner Grape, FREE. Two of the best fruits ever introduced, hardy all over the country, finest quality. Delicious Apple sold last season at \$6 a bushel, if you have only a few trees or plants you need this paper. Tells all about grafting, how to plant, cultivate, prune, spray, pack, market. Regular price \$1.00 a year, and two new fruits included free, but will make special offer if you answer this ad.

THE FRUIT-GROWER, Box 307, St. Joseph, Missouri

Send your paper three months FREE on trial, after which I will notify you to stop or become a subscriber.

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### EVERY HOME

should be adorned with Palms and other leaf and flowering plants. We have 44 greenhouses full. Also have hundreds of thousands of **Fruit** and **Ornamental** Trees, Shrubs, Roses, Plants, Vines, Bulbs, Seeds, Rarest new-choicest old. Mail size postage paid, safe arrival and satisfaction guaranteed. Larger by express or freight. Direct deal will save you money; try 1200 acres. 44 greenhouses.

The Storrs & Harrison Co. Box 140, Painesville, Ohio



### FRUIT TREES

\$5

**Freight Paid, Per 100**

Free from disease; all fumigated before shipping—Apple, Peach, Plum, Pear, Cherry, Carolina Poplar. Order here. Catalog Free.

RELIANCE NURSERY CO.,

Box 816, Geneva, N. Y.



### PATTEN'S TESTED TREES



Seven splendid new varieties hardy Northern grown apples. Specially adapted to the Northwest. Winners of Wilder Medal, highest award in U.S. Rapid growers, big yielders, good keepers and shippers. Money makers for fruit growers. Also,

#### NORTHERN GROWN

shade and ornamental trees for group, specimen, or windbreak planting. Especially for locations where only hardy stock will thrive. For 5c for postage and packing, we will send beautiful Hybrid Perpetual Rose and illustrated catalog with full description and prices free. Charles City Nursery & Orchard Co., Box 20, Charles City, Ia.

### GOOD SEEDS

#### THE BEST EVER GROWN



Prices lowest of all. Postage paid.

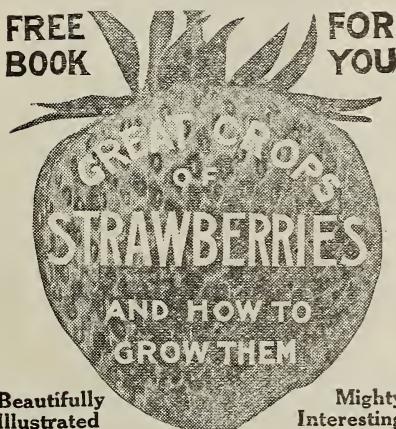
A lot of extra packages given free with every order of seeds I fill. Send name and address for my **FREE** big catalog. Over 700 engravings of vegetables and flowers.

R. H. SHUMWAY, Rockford, Illinois

## TWO MONEY MAKERS

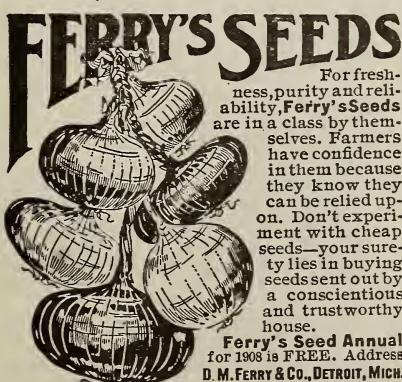
### SCARFF'S SMALL FRUITS

Scarf and bees are an ideal combination for bee-keepers or farmers. Order early and plant a generous quantity of the fruit. The bees will utilize these making them produce in luxurious abundance and at the same time increase amount and value of honey. \* 3 Blackberry Bushes Free. I want to prove how well-rooted, strong and vigorous my plants are. I will send free 3 fine blackberry plants, if you write for my new 1908 free catalog. Some of my customers are making over \$350 an acre with my plants. With bees you can increase that profit considerably. I sell a large variety of nursery stock, grown on an 80 acre farm. Write me to-day. W. N. SCARFF, New Carlisle, Ohio



If you want to know how to grow big crops of big red strawberries and to get big prices, send for our 1908 book. It tells all about soil preparation, setting, mating, pruning, cultivating, spraying, mulching, picking, packing and marketing. All of these essential features and many more are explained in such a way that you can't go wrong. It was written right out in the strawberry field by a man who has made a fortune growing strawberries, and he tells you just exactly how he does things. Send your address. That's all. The book is free.

R. M. Kellogg Co., Box 400, Three Rivers, Mich.



Ferry's Seed Annual for 1908 is FREE. Address D. M. FERRY & CO., DETROIT, MICH.

**BOOK "More Corn to the Acre" FREE**  
If you send names of 5 corn or stock growers and 10c for a year's trial to Farm & Stock, the only monthly devoted to corn and live stock. Regular rate \$1, but we make this offer to get list of wide awake growers. Farm & Stock, 824 Charles, St. Joseph, Mo.

### 110 VARIETIES STRAWBERRIES

If you want Strawberry Plants the best, strongest, most vigorous and most prolific that can be grown, in the good, favored strawberry climate, I am selling that kind at reasonable prices. Millions of them packed to carry anywhere. Also other small fruit plants and special seeds. My Free Catalogue tells about them and gives the price. If interested, write for it today. Address

W. F. ALLAN  
35 Market St. Salisbury, Md.

A beautiful colored plate of our

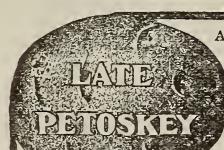
### New Eaton Red Raspberry

and our strawberry catalog of valuable information about varieties with instructions for beginners. Free to all.

THE FLANSBURGH & POTTER CO.,  
Leslie, Michigan.



**The Best Strawberries**  
grow from Farmer's plants. Introducer of "Oswego" strawberry and "Plum Farmer" raspberry. Fruit plants, all kinds. Catalog free. L. J. Farmer, Box 808, Pulaski, N. Y.



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Cooks dry and mealy. Delicious flavored, even when unripe. For 25c (stamps or coin), we will mail one pound of Late Petoskey, our 1908 catalog of Northern Grown Seeds, and a coupon good for 50c worth of free seeds. Catalog alone, mailed free. Write today. Supply very limited.

DARLING & BEAHAN,  
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# TREES

**FIFTY MILLIONS OF**  
 Hardy Evergreens \$4.00 and up per 1,000.  
 50 wonderful bargain lots for 1908, quality  
 the highest, prices the lowest of all, \$1.00  
 to \$10.00 per 100 prepaid. Pedigreed trees,  
 not wild, but **NURSERY GROWN AND  
 GUARANTEED**. Also full line Fruit,  
 Forest, Shade, Ornamental Trees and  
 Shrubs. Get my Free Catalog and  
 Shrub Shovel. Don't buy till you've seen  
 it. A beautiful Red Cedar Tree free  
 with every order.

D. Hill, Evergreen Specialist, Box 87, Dundee, Ill.

## 850,000 GRAPEVINES

69 Varieties. Also Small Fruits, Trees, &c. Best Rooted Stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive price-list free. Lewis Koenig, Box A, Fredonia, N.Y.

## Peach Trees

well-rooted trees. Free catalog. Freight paid.  
 Agents wanted. Special Prices to clear ground.

W. T. Mitchell & Son, Beverly, O.



### DEMING Sprayers

make money for  
 the users. Best  
 made—solidly  
 constructed.  
 Not injured by  
 chemicals.

Nineteen Eight Catalog  
 and "Expert  
 Testimony" will in-  
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### FENCE Strongest Made

Made of High Carbon Double Strength  
 Coated Wire. Heavily Galvanized  
 to prevent rust. Have no agents. Sell at  
 factory prices—20c per foot per panel.  
 We pay all freight. 37 heights of farm  
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COILED SPRING FENCE CO.  
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## FIX YOUR ROOF

5c Per Square.—We will guarantee to put  
 any old leaky, worn-out,  
 rusty, tin, iron, steel, paper, felt or shingle roof in  
 perfect condition, and keep it in perfect condition  
 for 5c per square per year.

The Perfect Roof Preserver, makes old,  
 worn-out roofs new. Satisfaction guaranteed  
 or money refunded. Our free roofing book  
 tells all about it. Write for it today.

The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.

**SHEERIN'S** Trees are fruitful Trees. They are propagated on honor. Sold on their merits. Guaranteed absolutely free from all disease, and Fresh Dug. Why not plant clean, healthy Trees when they cost no more than those infested with Scale? Our 80-page catalog will tell you more about it. It is full of good information, free to everybody. **SHEERIN'S WHOLESALE NURSERIES, :: DANSVILLE, N.Y.**

## A New STRAWBERRY

We have been growing and selling strawberry-plants in this town over thirty years. We introduced Brandwine, Kitty Rice, Senator Dunlap, Wm. Belt, and others of value. Now we are bringing out the **Highland** which we expect to **Money-maker**. Let us tell you about it and forty others. It will cost you but a postal card.

M. Crawford Co., Box 1004, Cuyahoga Falls, Ohio

## ALSIKE CLOVER SEED

Medium red, and large; also timothy seed for sale. Write for samples and prices. Catalog of apiary supplies free. F. A. SNELL, Milledgeville, Carroll Co., Ill.

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Remarkable Discovery that Cuts  
 Down the Cost of Paint Seventy-  
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A Free Trial Package is Mailed to Every  
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A. L. Rice, a prominent manufacturer of Adams, N.Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder, and all that is required is cold water to make a paint weather-proof, fire-proof, and as durable as oil paint. It adheres to any surface, wood, stone, or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 202 North St., Adams, N.Y., and he will send you a free trial package, also color-card and full information showing you how you can save a good many dollars. Write to-day.



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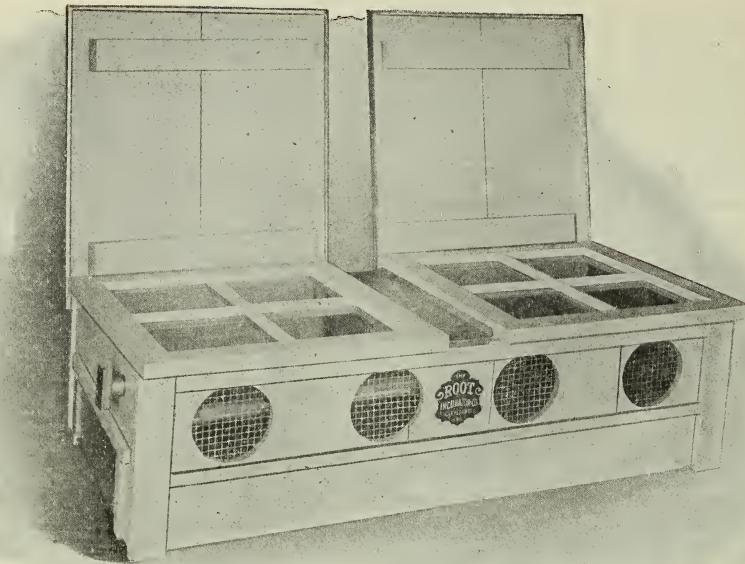


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Because of leg weakness?

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There must have been unnatural conditions that caused your losses, and it is to your interest to look into your brooding equipment.

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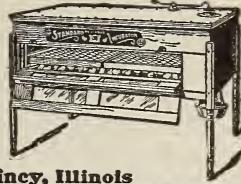
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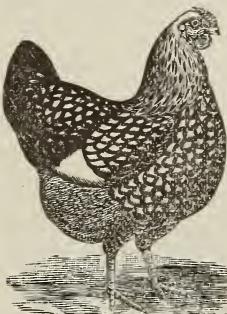
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Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

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A young apiarist, before starting business for himself, intends to spend a season, as assistant, in a large apiary of Ontario or the Eastern States.

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**WANTED.**—Apiarist to help with 200 stands of bees, all of which are run for extracted honey. Prefer a young man who has had experience in Cuba or some other tropical country. Will pay \$25.00 and board per month until Oct. 1. Fare from New York, New Orleans, or Havana, first class, \$32.50; second class, \$37.50; from Santiago de Cuba, \$10.00 less.

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**FOR SALE.**—Indian Runner duck eggs from choice stock, \$1.00 per 12; \$4.00 per 55; \$6.50 per 100. KENT JENNINGS, Mt. Gilead, O.

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## "Seaboard Magazine" S IX SOUTHERN STATES SEABOARD'S TRONCHOLD Free A MAN'S DISPOSITION

is, without doubt, seriously affected by the climatic conditions which surround him.

### ARE YOU PLEASANTLY LOCATED?

Are you shut in by the ice and snow of a rigorous winter, with naught but a cheerless sky to gaze upon? What of your lands now? Covered with snow? How about your stock? Have to keep horses and fed?

The farmers in our territory are plowing, their stock grazing on the hillsides, and in the famous Manatee section growers are shipping their products to Northern markets, receiving remarkable prices for the same, due to the season.

Our lands are just as fertile as yours, produce just as much and at a time when prices are the best. It's a duty you owe yourself and family to look into this.

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The climate in the six States traversed by our line is unsurpassed anywhere, and the profits being derived by those who only a few years ago were battling with the rigors of winter in northern location is evidence of the value of our lands. Do you expect to remain where you are and keep up the struggle? Why not come down into southern sunshine and be pleasantly located, while at the same time you are deriving big profits from your crops?

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### CLOVER SEEDS.

There has been a sharp advance in clover seed, so that the best price at which we can offer Medium Mammoth or alsike seed, choice, is \$12.00 per bushel; half bushel, \$6.25; peck, \$3.25; per lb., 23 cts.; by mail, 32 cts. per lb. Alfalfa seed will have to go at the same price. Medium grades of seed may be furnished a little cheaper. Strange as it may seem, white-clover seed is now cheaper than other kinds, and can still be furnished at \$10.00 per bushel; \$5.25 per half bushel; \$2.75 per peck; 20 cts. per lb. Crimson or scarlet clover will be furnished at \$8.75 per bag of two bushels; \$4.50 per bushel; half bushel, \$2.40; peck, \$1.25; 1 lb., 10 cts.; by mail, 20 cts. Unhulled white-sweet-clover seed at \$11.00 per 100 lbs.; \$3.00 for 25 lbs.; \$1.30 for 10 lbs.; 15 cts. per lb.; by mail, 25 cts. Hulled seed, when we have it, 7 cts. per lb. extra.

### COLD-FRAME OR HOT-BED SASH.

We are receiving some large orders for these sash, and we believe that, if more of the truck-gardeners understood how good they are, and the low price at which they may be had, we should be swamped with orders. We have not seen as low prices quoted by anybody else, not even the cut-rate mail-order houses, as we are making on these. Some of our readers may know of greenhouse-men in their neighborhood who do not take this journal, and may do them a favor by calling their attention to our prices. Cypress hot-bed sash,  $3\frac{1}{2}$  feet by 6 feet, for four rows of eight-inch glass, with hard-wood round rod crosswise through the bars midway between the ends to help space the bars and hold them secure, shipped K. D., 90 cts. each; 5 for \$4.25; 10 for \$8.00. Put together, 10 cts. each more, not painted. If painted, add 10 cts. for each coat of paint. If glazed with 8 x 10 glass, add \$1.00 per sash; 8 x 10 glass, \$2.40 per box: 5 boxes at \$2.30, or 10 boxes at \$2.20.



is the most practical little device ever invented, for mending harness, shoes, canvas, carpets, etc. Sews like sewing machine. Every family needs one. Sample ready to use \$1 postpaid. Book C. C. A. Myers Co., 6537 Woodlawn Ave., Chicago.

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J. W. Taylor & Son have made a specialty of breeding for the best honey-gatherers. Our three and five banded Italians can't be beat, or haven't been, as honey-gatherers. Unquestioned, \$1.00 each, or \$9.00 a dozen; tested queens, \$1.25 each, or \$12.00 a dozen. Select tested queens, \$1.50 each; breeders, the very best, \$3.00 to \$5.00 each. Send all orders to

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## Bee and Poultry Supply House

We are now in position to offer the bee-keepers of New York and Vermont a full line of Bee and Poultry Supplies, etc., including Incubators, Brooders, Rochester Spray Pumps, Asphalt Roofing, etc.; also a general line of Hardware, Paints, and Oils. Will be pleased to send the different catalogs on request.

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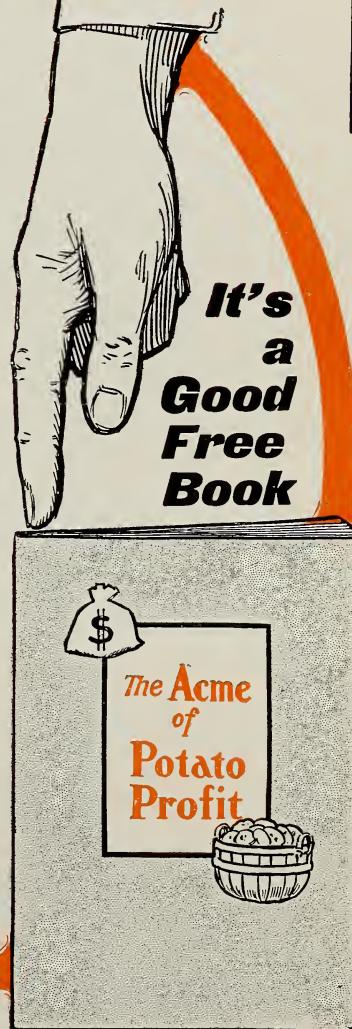
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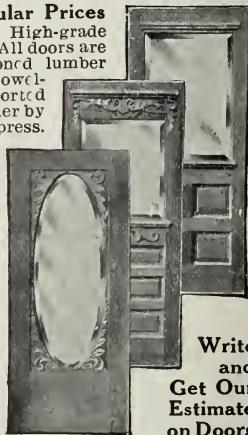
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